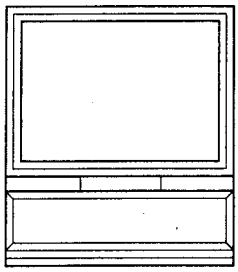
Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
ARP2936

PROJECTION MONITOR RECEIVER

PRO-119
PRO-99

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	PRO-119	PRO-99		
KUXC	○	○	AC120V	

CONTENTS

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

1.1 SAFETY PRECAUTIONS

NOTICE:Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.
The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled.
   Keep picture tube away from the body while handling.
2. When service is required, even though the PROJECTION MONITOR RECEIVER an isolation transformer should be inserted between power line and the set in safety before any service is performed.
3. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
4. When service is required, observe the original lead dress.
   Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
5. Always use the manufacturer's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's.
   Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

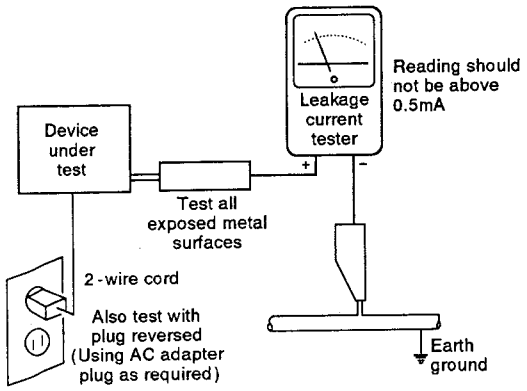
Leakage Current Cold Check

With the AC plug removed from the 120V AC 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester(DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part(input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MΩ and a maximum resistor reading of 5MΩ . Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 120V AC 60Hz outlet (do not use an isolation transformer for this check). Turn the AC power switch on.

Using a "Leakage Current Tester(Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet(input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground(water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

High Voltage

This set is provided with a X-ray protection for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this X-ray protection may correctly be operated.

Serviceman Warning

In the status of the black picture(video muting is being applied)when no signal is input, high voltage of this set during operation is less than 30.5kV. In case any component having some relation to the high voltage is replaced, confirm that the high voltage is lower than 30.5kV in the status of the black picture when no signal is input.

To measure H.V. use a high impedance H.V. meter.

Connect (-) to earth and (+) to the FBT anode cable connector. (Refer to page 132.)

X-radiation

TUBE: The primary source of X-radiation in this set is the picture tube.

For continued X-radiation protection, the replacement tube must be the same type as the original, PIONEER approved type.

The picture tube(CRT assy R, G, B)used in this set holds complete guarantee against X-ray radiation when the X-ray is sealed (See page 4). Accordingly, when the current in flowing to the picture tube(CRT assy R, G, B), be sure to perform it by putting the tube into X-ray sealed applied state. Avoid absolutely to flow the current to the picture tube (CRT assy R, G, B) itself. Moreover, when the voltage of the high voltage circuit becomes abnormally a little higher, the picture tube radiates X-rays. Accordingly, when servicing the high voltage circuit be sure to replace as an assy with the POWER SUPPLY assy in the manner in which has been adjusted to perform normal operation.

1.2 PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

1.3 CHARGED SECTION, HIGH VOLTAGE GENERATING POINT AND X-RAY PROTECTION

■ Charged section

The circuit in which the commercial AC power is used as it is without passing through the power supply transformer. If the charged section is touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. In this case, be sure to connect the set via an insulated transformer and supply the current.

■ Charged section (Power supply primary side)

1. The primary side of the POWER SUPPLY assy
2. AC power cord
3. MAIN SW assy

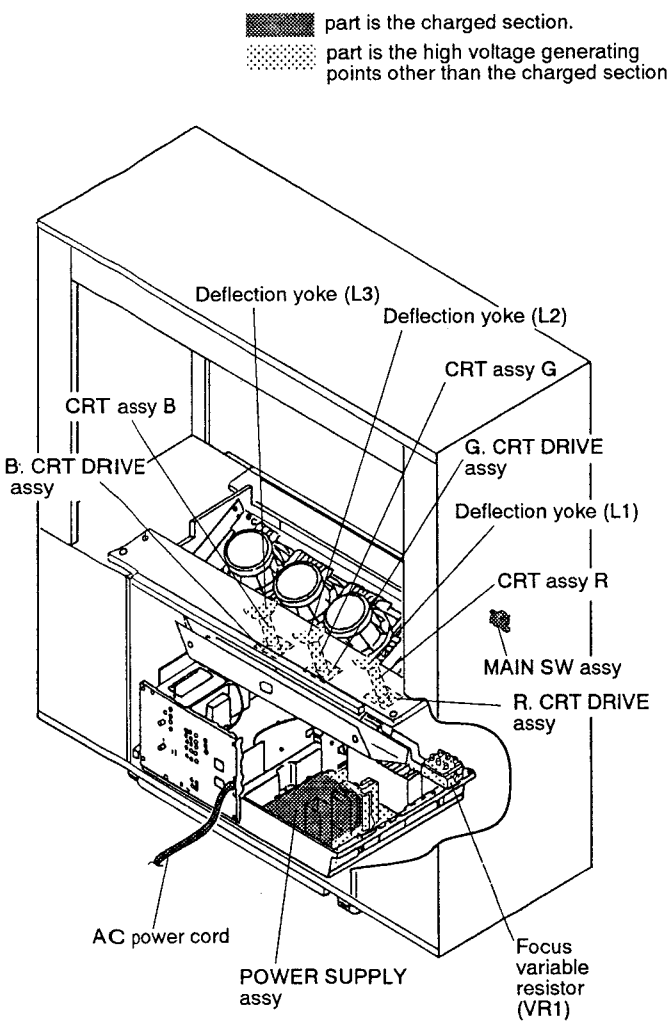


Fig. 1 Charged section and high voltage generating point

■ High voltage generating point

The place where voltage of over 100V is generated.

1. Charged section
2. POWER SUPPLY assy (including FBT) (30.5kV, 135V)
3. R. CRT DRIVE assy (10.5kV)
4. G. CRT DRIVE assy (10.5kV)
5. B. CRT DRIVE assy (10.5kV)
6. CRT assy R (30.5kV)
7. CRT assy G (30.5kV)
8. CRT assy B (30.5kV)
9. Focus variable resistor (VR1) (10.5kV)
10. Deflection yokes (L1, L2, and L3) (Approx. 1100V at peak)

■ X-ray protection

- Regarding the parts which are relative to radiation of X-rays (There is the danger to radiate X-ray from the individual CRT assy R, G, B), there are notifications of caution in the individual schematic diagrams. Be sure to read them for safety's sake.
- The component parts for X-ray protection are as follows :When the current flows to the CRT assy R, G, B, be sure to perform it with these parts being attached. Protection from the X-ray radiation is maintained in the state in which these parts have been installed to the CRT assy R, G, B. Accordingly, never supply current only to the CRT assy R, G, B.
  Moreover, the anode voltage of the CRT assy R, G, B should always be kept not higher than the predetermined value (in the minimum brightness and picture state when non signal input is higher than 30.5kV). Be sure to drive the CRT assy R, G, B by using a completely functional POWER SUPPLY assy which have been adjusted completely in the combined state. (When the voltage abnormally becomes high, the X-ray protection circuit will operate.)

1. CRT assy R, G, B (Do not dismantle CRT assemblies under any circumstances).
2. Each Lens assy

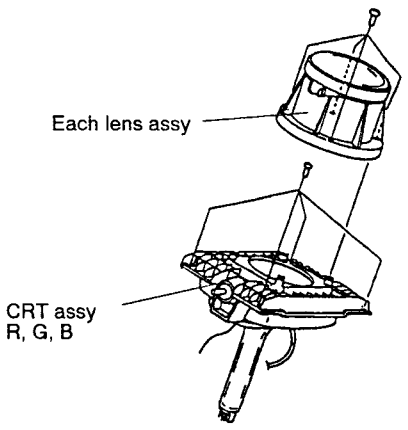
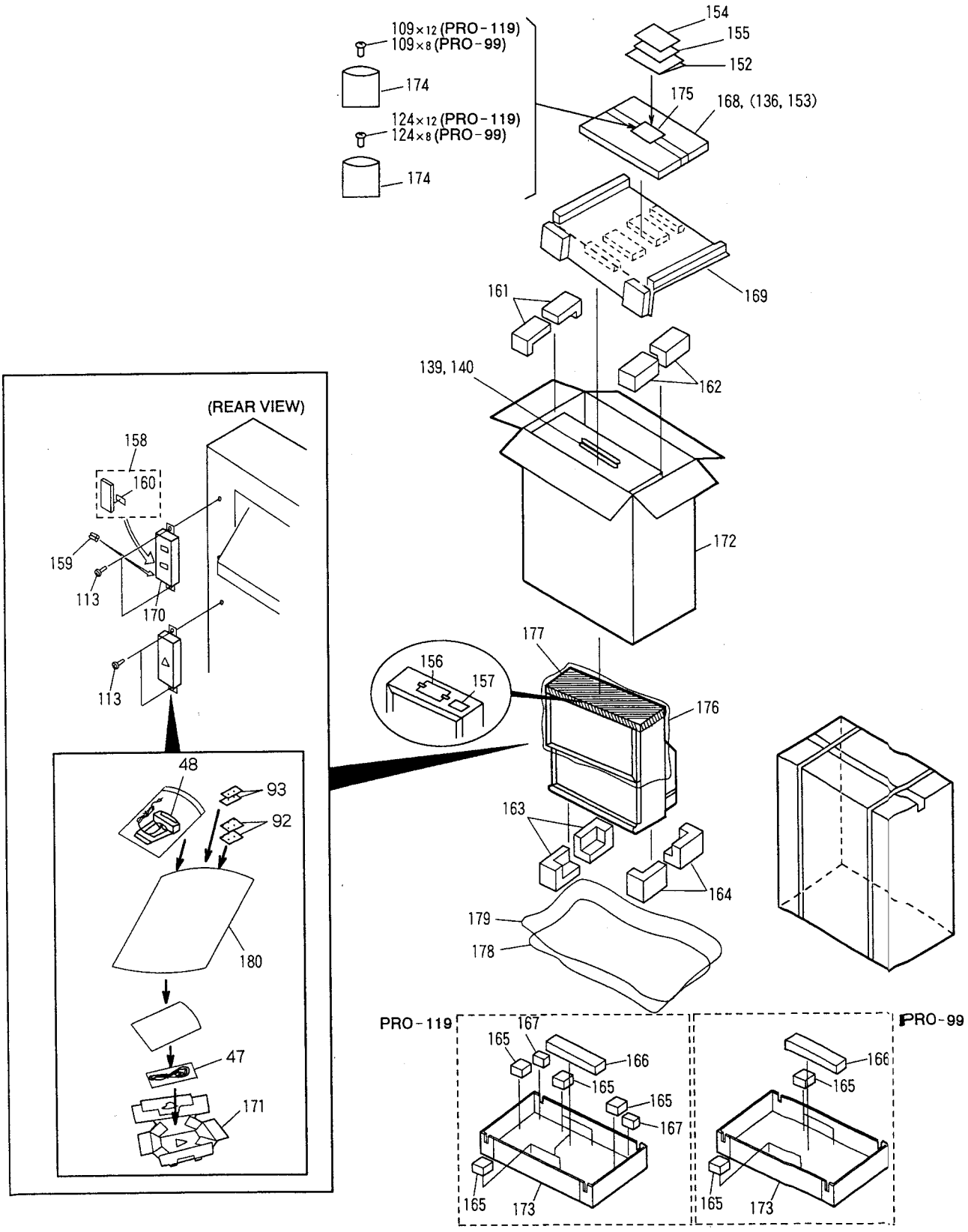


Fig. 2 Component parts for X-ray protection

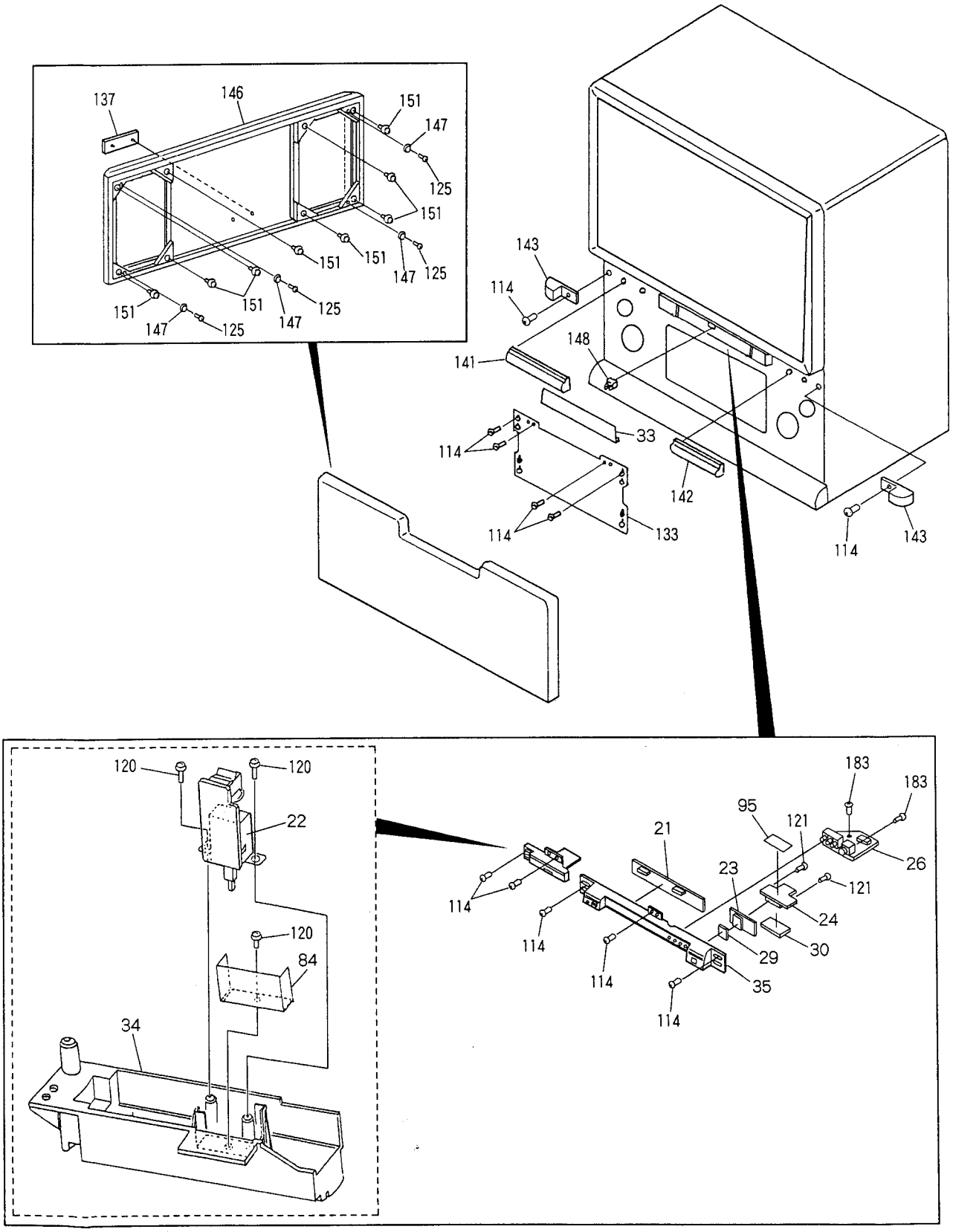
2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

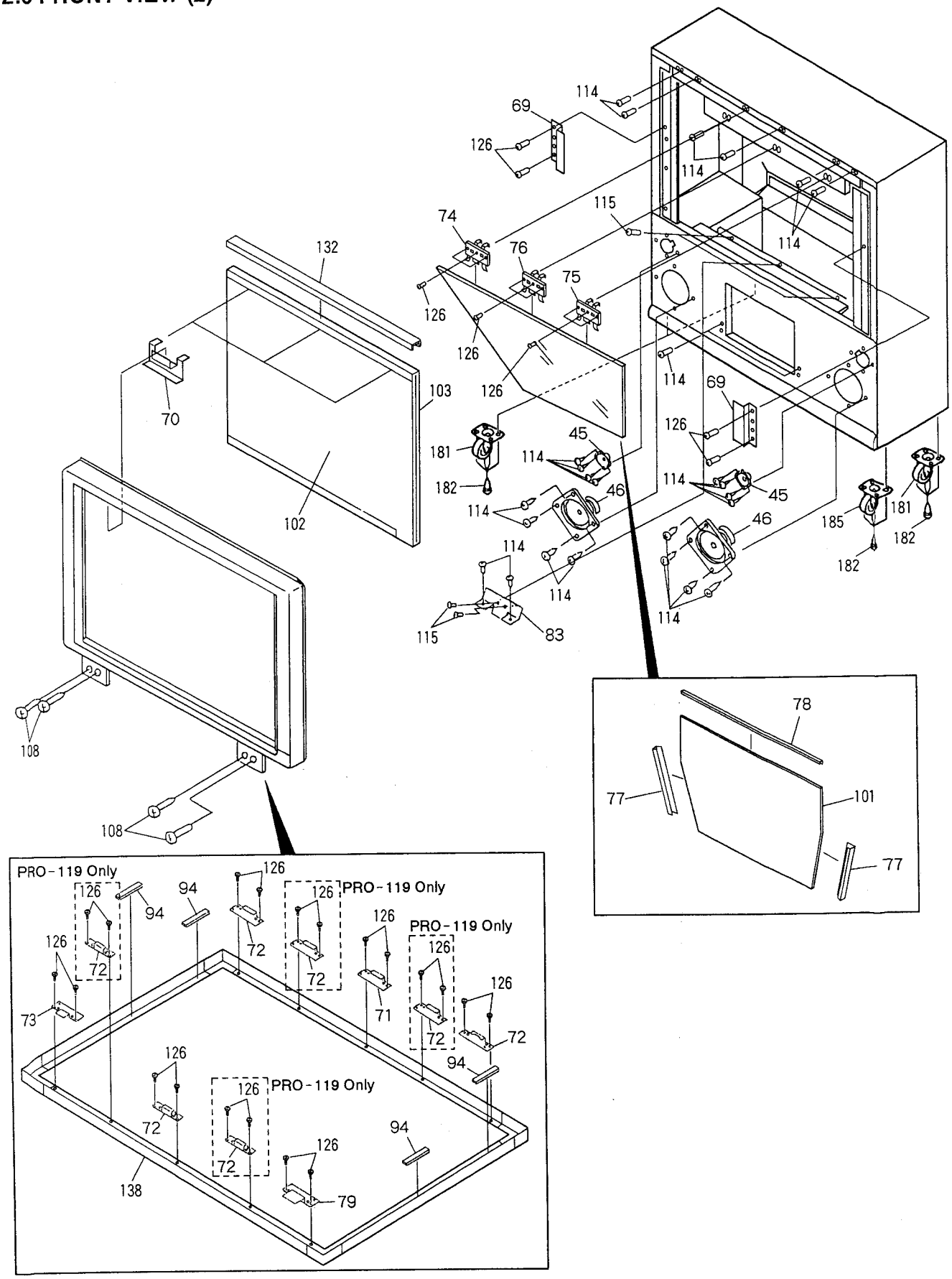


2.2 FRONT VIEW (1)

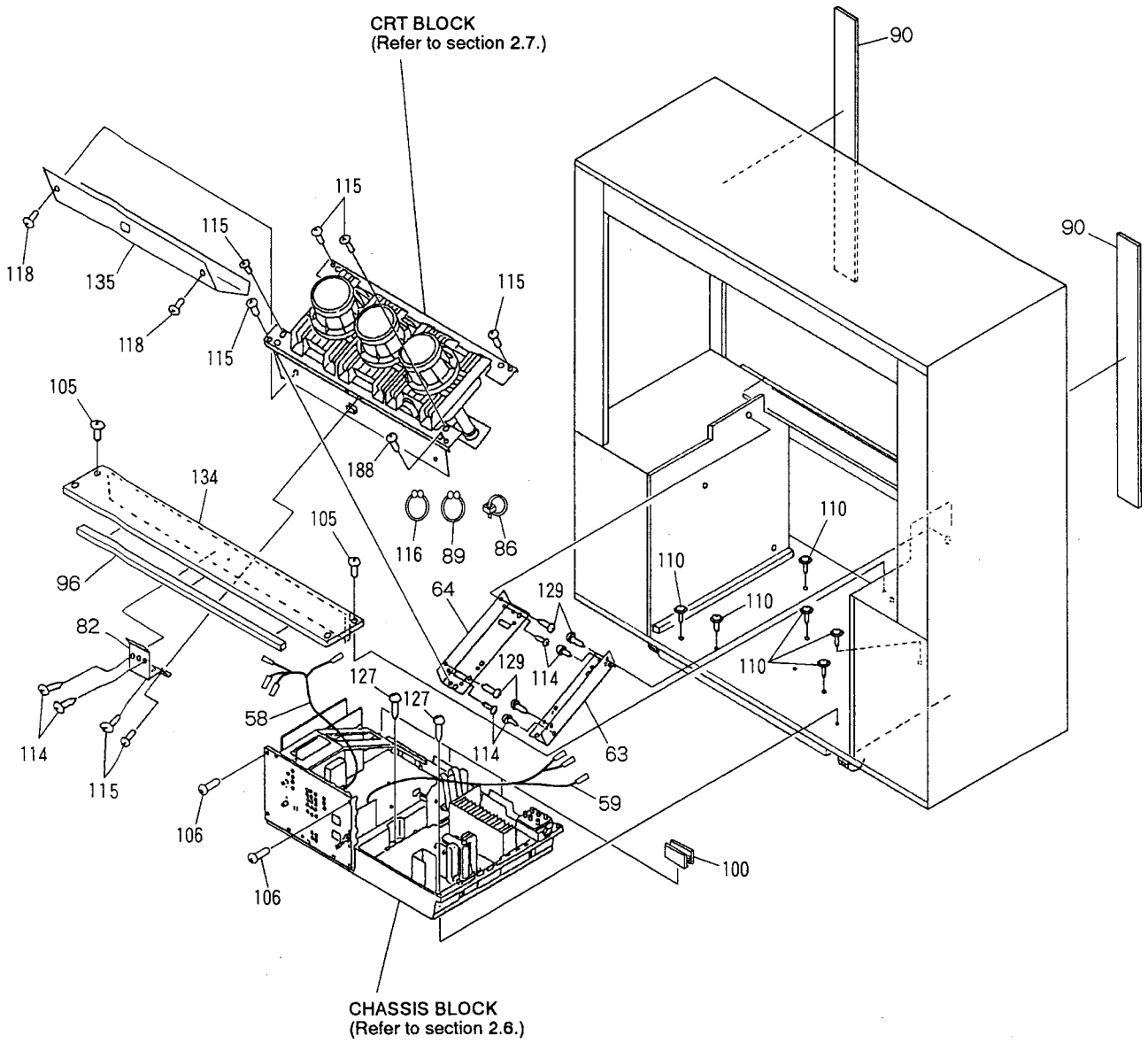
NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.



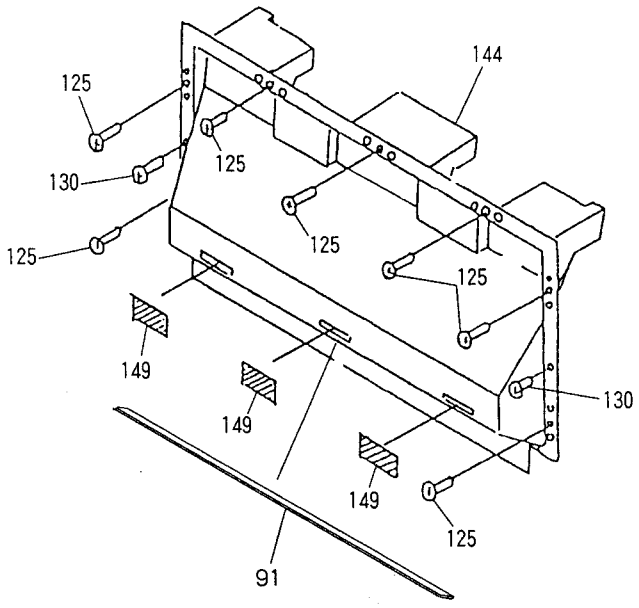
2.3 FRONT VIEW (2)

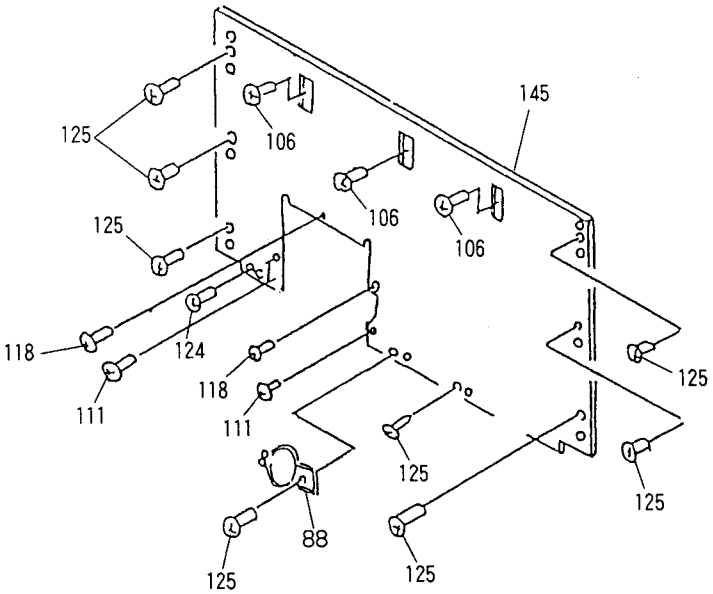


2.4 REAR VIEW (1)

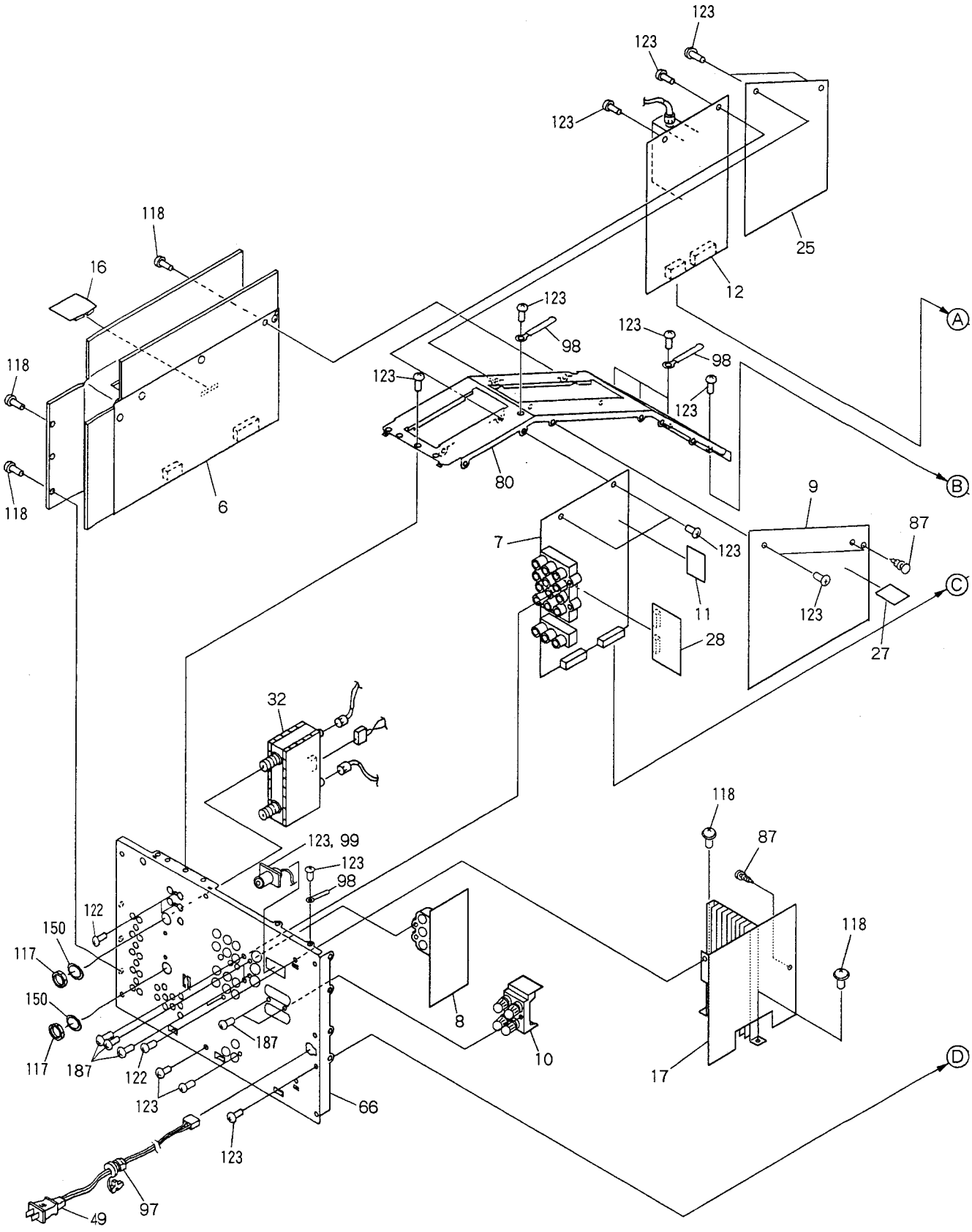


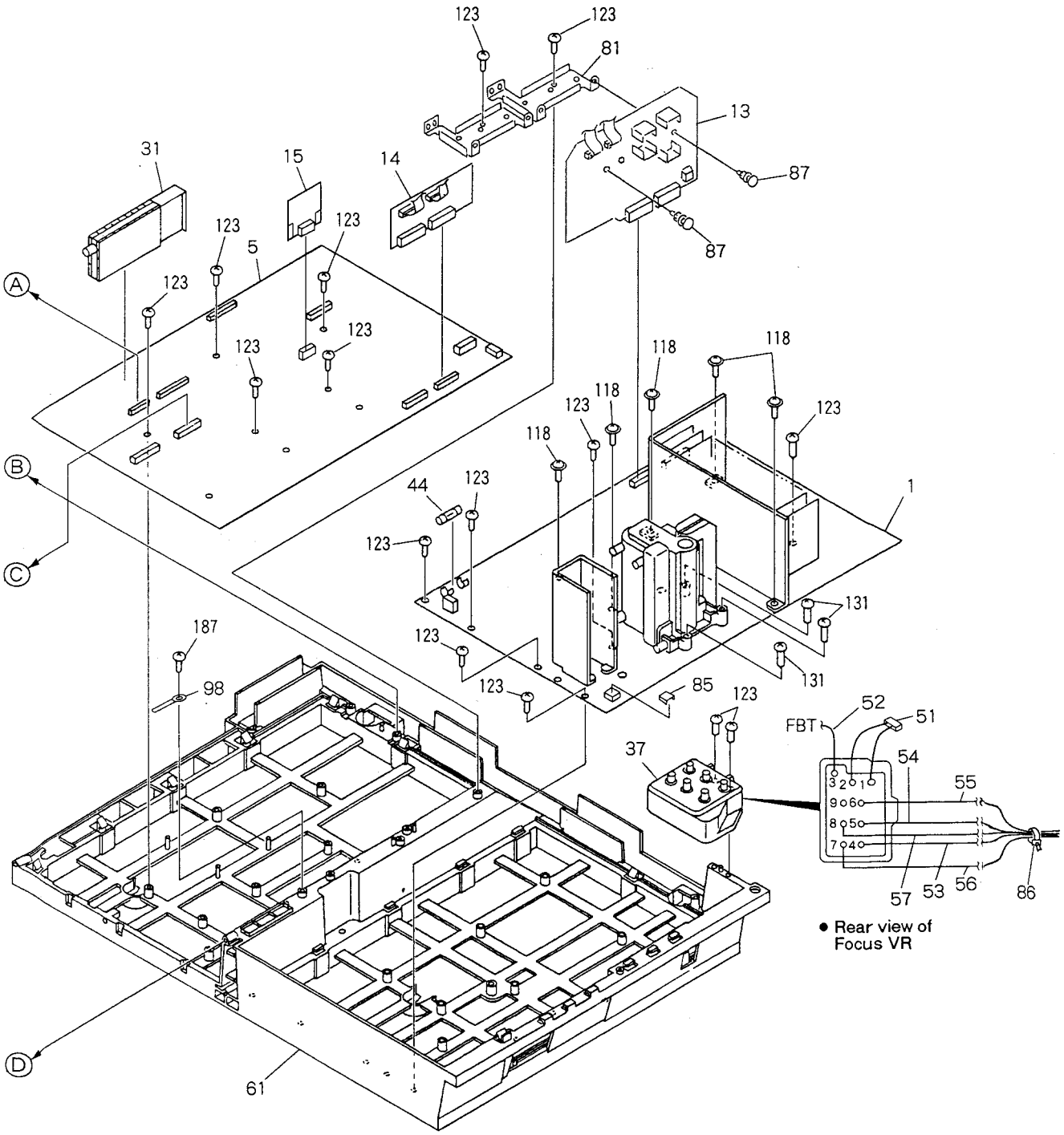
2.5 REAR VIEW (2)





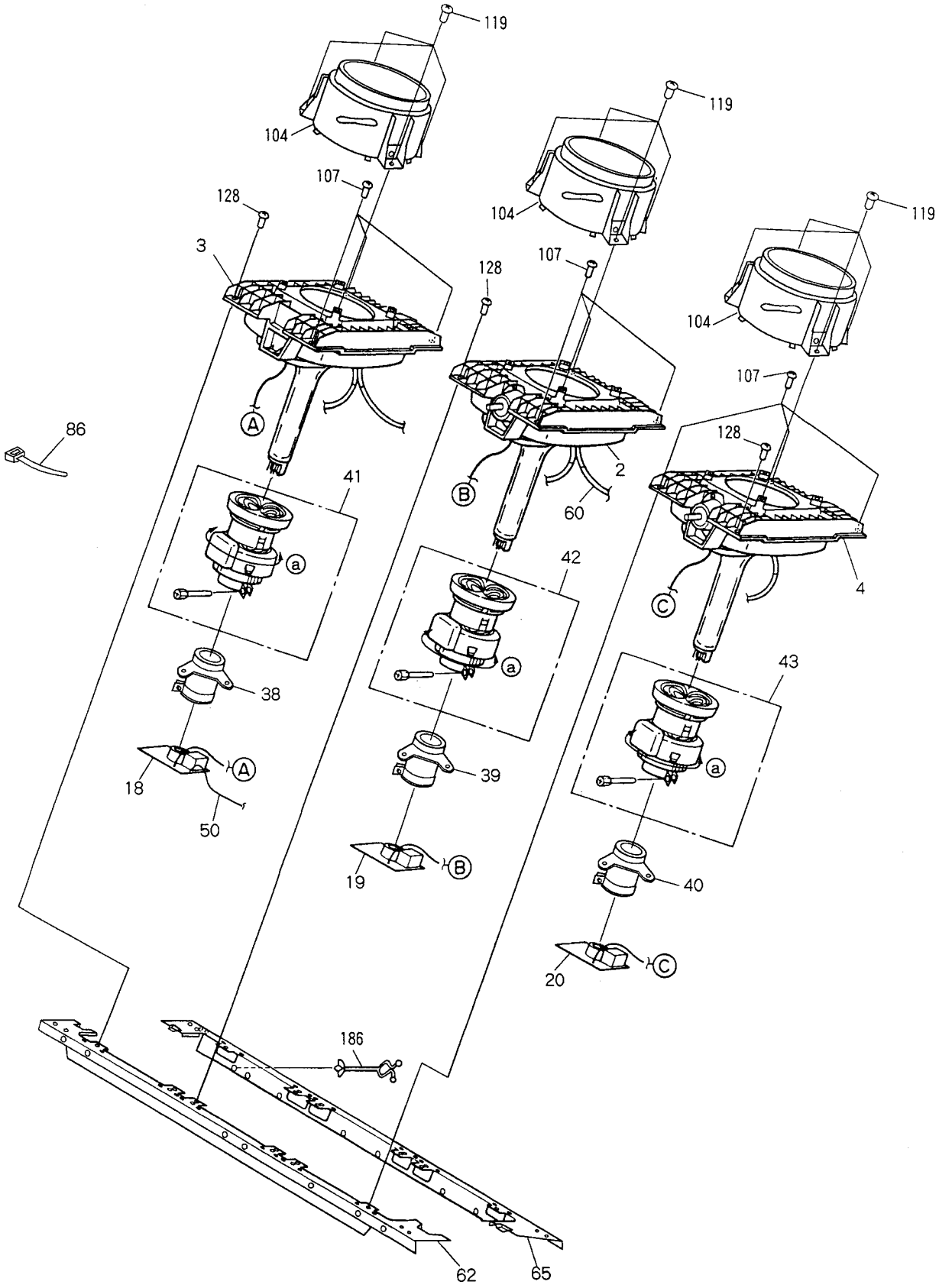
2.6 CHASSIS BLOCK





• Rear view of Focus VR

2.7 CRT BLOCK


119
104
107
128
3
86
41
38
18
50
A
a
119
104
107
128
2
60
B
42
39
19
119
104
107
128
4
C
43
40
20
186
62
65

2.8 PARTS LIST

NOTES :
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by ☆ are important parts which relate to X-rays radiation. If any of these parts need to be replaced, always replace with specified parts.*
- *For POWER SUPPLY ASSY, AWV1558 is used, but for servicing, AWV1565 is supplied. AWV1565 is the same as AWV1558 of which X-ray protection and high voltage sections have been adjusted and these adjusted parts are covered with the shield cases. Therefore, AWV1565 need not be adjusted.*

(1) Parts List for PRO-119/KUXC

Mark	No.	Description	Part No.
☆	1	POWER SUPPLY ASSY	AWV1565
☆	2	CRT ASSY(G)	AWY1364
☆	3	CRT ASSY 60(R)	See Contrast Table(2)
☆	4	CRT ASSY 60(B)	See Contrast Table(2)
	5	TUNER•VIDEO ASSY	AWV1559
	6	CONVERGENCE ASSY	AWZ6098
	7	AV I/O ASSY	AWZ6099
	8	Y/C SELECTOR ASSY	AWZ6100
	9	P IN P ASSY	AWZ6101
	10	EXT SP ASSY	AWZ6102
	11	B CONNECTOR ASSY	AWZ6103
	12	ISC ASSY	AWZ6104
	13	VM ASSY	AWZ6105
	14	A CONNECTOR ASSY	AWZ6106
	15	FULL CINEMA MUTE ASSY	AWZ6107
	16	FULL CINEMA CONVER ASSY	AWZ6108
	17	AUDIO ASSY	AWZ6109
	18	R. CRT DRIVE ASSY	AWZ6110
	19	G. CRT DRIVE ASSY	AWZ6111
	20	B. CRT DRIVE ASSY	AWZ6112
	21	FRONT CONTROL ASSY	AWZ6113
	22	MAIN SW ASSY	AWZ6114
	23	IR RECEIVER ASSY	AWZ6115
	24	SUB RECEIVER ASSY	AWZ6116
	25	3D Y/C ASSY	AWZ6117
	26	FRONT INPUT ASSY	AWZ6118
	27	D CONNECTOR ASSY	AWZ6119
	28	PINP SELECTOR ASSY	AWZ6120
	29	RECEIVER ELEMENT ASSY	AWZ6073
	30	RECEIVER CIRCUIT ASSY	AWZ6074
	31	TV FRONT END SYSTEM UNIT	AXF1084
	32	RF SWITCH	AXF1086
	33	DOOR ASSY	AAN1413
	34	SUB PANEL ASSY	AMB2556
	35	FRONT PANEL ASSY	AMB2596
	36	SCREEN HOLDER LOW60P	AAP1542
⚠	37	FOCUS VR(VR1)	ACX1096
⚠	38	VM COIL(L4)	ATL1123
⚠	39	VM COIL(L5)	ATL1123
⚠	40	VM COIL(L6)	ATL1123
⚠	41	DEFLECTION YOKE(L1)	ATL1127
⚠	42	DEFLECTION YOKE(L2)	ATL1127
⚠	43	DEFLECTION YOKE(L3)	ATL1127
⚠	44	FUSE(FU102:500mA/125V)	AEK1010
	45	CONE SPEAKER(TWEETER)	APT1004
	46	CONE SPEAKER	APV1021
	47	MINI REPEATER	ADF1002
	48	MAIN REPEATER	AXF7001
⚠	49	AC POWER CORD	BDG1019
⚠	50	VM WIRE HARNESS(J13)	ADX2229
	51	4P HOUSING WIRE(J2)	ADX2230
	52	1P LEAD WIRE(J3)	ADX2231
	53	1P LEAD WIRE(J4)	ADX2232
	54	1P LEAD WIRE(J5)	ADX2233
	55	1P LEAD WIRE(J6)	ADX2236
	56	1P LEAD WIRE(J7)	ADX2237
	57	1P LEAD WIRE(J8)	ADX2238
	58	WIRE HARNESS	ADX2256
	59	8P HOUSING WIRE(J12)	ADX2257
⚠	60	ANODE CABLE(J1)	ADY1012
NSP	61	CHASSIS	AMA1011
NSP	62	CRT FRONT FRAME(60)	See Contrast Table(2)
NSP	63	CRT STAND HOLDER(L)	ANA1516
NSP	64	CRT STAND HOLDER(R)	ANA1517
NSP	65	CRT REAR FRAME(60)	See Contrast Table(2)
	66	REAR PANEL	ANC2279
	67	• • • • •	
	68	• • • • •	
NSP	69	SCREEN SIDE FITTING	ANG1993
NSP	70	UPPER CABINET METAL	ANG2000
NSP	71	UPPER SCREEN METAL A	ANG2001
NSP	72	UPPER SCREEN METAL B	ANG2002
NSP	73	UNDER SCREEN METAL A	ANG2003
NSP	74	MIRROR UPPER STAY L	ANG2004
NSP	75	MIRROR UPPER STAY R	ANG2005
NSP	76	MIRROR UPPER STAY C	ANG2006
NSP	77	MIRROR FRAME V	See Contrast Table(2)

Mark	No.	Description	Part No.
NSP	78	MIRROR FRAME H	See Contrast Table(2)
NSP	79	UNDER SCREEN METAL B	ANG2009
NSP	80	PCB FRAME	ANG2045
NSP	81	PCB HOLDER H	ANG2056
NSP	82	CRT REAR HOLDER	ANG2119
NSP	83	CRT FRONT HOLDER	See Contrast Table(2)
NSP	84	FRONT SHIELD	ANK1502
	85	SHIELD CASE	ANK1510
	86	NYLON BINDER	AEC-093
	87	RIVET	AEC-441
NSP	88	CABINET WIRE HOLDER	AEC1263
	89	PURSE LOCK	AEC1540
	90	SCREEN CUSHION 60P	See Contrast Table(2)
	91	MIRROR CASE CUSHION	AEC1627
	92	CLOTH MAGIC TAPE A	AEC1630
	93	CLOTH MAGIC TAPE B	AEC1631
	94	FRAME CUSHION P	AEC1634
	95	FRONT SHEET(PVC)	AEC1635
	96	BACK COVER CUSHION	See Contrast Table(2)
	97	AC CORD STOPPER	AEP-113
	98	BINDER	AEP-215
	99	BNC CAP	AMR2314
	100	WIRE HOLDER	AMR2832
	101	MIRROR(60A)	See Contrast Table(2)
	102	LENTICULAR SHEET 60	See Contrast Table(2)
	103	FRESNEL (60)	See Contrast Table(2)
☆	104	LENS ASSY (60)	See Contrast Table(2)
	105	SCREW	ABA1124
	106	SCREW	ABA1149
	107	SCREW (STEEL)	ABA1168
	108	M5 SCREW	ABA1189
	109	SCREW	ABA1226
	110	SPECIAL SCREW	ABA1234
	111	SPECIAL SCREW	ABA1235
	112	• • • • •	
	113	SPECIAL SCREW	ABA1239
	114	SPECIAL SCREW	ABA1240
	115	SPECIAL SCREW	ABA1244
NSP	116	PURSE LOCK S	AEC1261
	117	HEXAGONAL DUCT NUT	ABN-087
	118	SCREW	ABZ30P120FZK
	119	SCREW	AMZ40P080FZK
	120	SCREW	APZ30P080FZK
	121	SCREW	APZ40P120FZK
	122	SCREW	BBZ30P080FZK
	123	SCREW	BBZ30P140FZK
	124	SCREW	BMZ40P100FZK
	125	SCREW	BYC35P160FZK
	126	SCREW	BYC40P160FMC
	127	SCREW	BYC40P350FZK
	128	SCREW	FBT40P120FZK
	129	SCREW	PMB50P200FZK
	130	SCREW	PYC40T140FZB
	131	SCREW	VBZ30P200FMC
	132	SCREEN HOLDER TOP 60	See Contrast Table(2)
	133	BLIND PLATE	AMM2577
NSP	134	BACK COVER PANEL	See Contrast Table(2)
NSP	135	TRAY (PLS)	AMR2563
NSP	136	ACRYLIC PANEL (60)	See Contrast Table(2)
	137	ELITE BADGE	AAM1076
	138	SCREEN FRAME ASSY(60)	See Contrast Table(2)
	139	FRAME COVER ASSY(60)	See Contrast Table(2)
	140	FRAME COVER V ASSY(60)	See Contrast Table(2)
	141	SIDE PANEL ASSY(60L)	See Contrast Table(2)
	142	SIDE PANEL ASSY(60R)	See Contrast Table(2)
	143	SIDE COVER	See Contrast Table(2)
	144	MIRROR CASE (51)	AME2296
	145	REAR COVER	AMM2582
	146	GRILLE (60)	See Contrast Table(2)
	147	MAGIC TAPE	AEC1394
	148	CATCHER F2M	AEC1609
	149	BLIND SHEET(PVC)	AEC1622
	150	BUSHING	AEC1661
NSP	151	CATCHER A	ANZ-241
	152	OPERATING INSTRUCTIONS (ENGLISH)	ARB1501
	153	ACRYLIC CAUTION CARD	ARH1152
NSP	154	SAFEGUARD CARD	ARM1075
	155	ATTENTION CARD	ARM1108
	156	CONVER ATTENTION CARD	ARM1115
	157	CASTER CAUTION CARD	See Contrast Table(2)
	158	REMOTE CONTROL UNIT(CU-SD100)	AXD1425
NSP	159	ALKALINE DRY CELL BATTERY (LR6, AA)	AEX1018
	160	BATTERY COVER	AZN7327
	161	UPPER PAD L	AHA2067
	162	UPPER PAD R	AHA2068
	163	UNDER PAD L	AHA2069
	164	UNDER PAD R	AHA2070
NSP	165	CUSHION B	See Contrast Table(2)

Mark	No.	Description	Part No.
NSP	166	CUSHION C	AHA2076
NSP	167	CUSHION D	See Contrast Table(2)
	168	CARDBOARD CASE (60)	See Contrast Table(2)
	169	CARDBOARD SPACER(60)	See Contrast Table(2)
	170	CU PACKING CASE	AHC1019
	171	PACKING CASE A	AHC1024
	172	UPPER CARTON (60P)	See Contrast Table(2)
	173	UNDER CARTON (60P)	See Contrast Table(2)
NSP	174	WRAPPER BAG	AHG1076
NSP	175	LITERATURE BAG	AHG1222
NSP	176	PACKING SHEET(60)	See Contrast Table(2)
NSP	177	VINYL SHEET 60 UPPER	See Contrast Table(2)
NSP	178	VINYL SHEET 60 UNDER	See Contrast Table(2)
NSP	179	PACKING SHEET 60L	See Contrast Table(2)
NSP	180	WRAPPER BAG A	AHG1236
	181	CASTER	AMR2547
	182	SPECIAL SCREW	ABA1126
	183	SCREW	ABZ30P080FZK
NSP	184	BNC SOCKET (CN1)	AKX1036
	185	CASTER	See Contrast Table(2)
NSP	186	LEAD CLAMPER M	AEC1611
	187	SCREW	BBZ30P100FZK
	188	SCREW	ACZ40P080FMC

(2) Contrast of PRO-119/KUXC and PRO-99/KUXC

PRO-119/KUXC and PRO-99/KUXC have the same construction except for the following:

Mark	No.	Symbol & Description		Part No.		Remarks
		PRO-119/KUXC	PRO-99/KUXC	PRO-119/KUXC	PRO-99/KUXC	
☆	3	CRT ASSY 60(R)	CRT ASSY 51(R)	AWY1367	AWY1365	
☆	4	CRT ASSY 60(B)	CRT ASSY 51(B)	AWY1368	AWY1366	
NSP	62	CRT FRONT FRAME (60)	CRT FRONT FRAME (51)	ANA1515	ANA1513	
NSP	65	CRT REAR FRAME (60)	CRT REAR FRAME (51)	ANA1520	ANA1518	
NSP	77	MIRROR FRAME V	MIRROR FRAME V	ANG2007	ANG2084	
NSP	78	MIRROR FRAME H	MIRROR FRAME H	ANG2008	ANG2083	
NSP	83	CRT FRONT HOLDER	CRT FRONT HOLDER	ANG2120	ANG2121	
	90	SCREEN CUSHION 60P	SCREEN CUSHION 51P	AEC1623	AEC1621	
	96	BACK COVER CUSHION	BACK COVER CUSHION 60	AEC1656	AEC1626	
	101	MIRROR (60A)	MIRROR	AMR2739	AMR2852	
	102	LENTICULAR SHEET 60	LENTICULAR SHEET 51	AMR2752	AMR2751	
	103	FRESNEL (60)	FRESNEL (51)	AMR2844	AMR2845	
☆	104	LENS ASSY (60)	LENS ASSY	AMR2857	AMR2803	
	132	SCREEN HOLDER TOP 60	SCREEN HOLDER TOP 51P	AAP1502	AAP1525	
NSP	134	BACK COVER PANEL	BACK COVER PANEL	AMM2664	AMM2663	
NSP	136	ACRYC PANEL (60)	ACRYC PANEL (51)	AAK2633	AAK2632	
NSP	138	SCREEN FRAME ASSY (60)	SCREEN FRAME ASSY (51)	AAP1515	AAP1514	
	139	FRAME COVER ASSY (60)	FRAME COVER ASSY (51)	AAP1521	AAP1520	
	140	FRAME COVER V ASSY (60)	FRAME COVER V ASSY (51)	AAP1557	AAP1560	
	141	SIDE PANEL ASSY (60L)	SIDE PANEL ASSY (51L)	AMB2583	AMB2584	
	142	SIDE PANEL ASSY (60R)	SIDE PANEL ASSY (51R)	AMB2586	AMB2587	
	143	SIDE COVER	SIDE COVER	AMR2743	AMR2573	
	146	GRILLE (60)	GRILLE (51)	AMM2584	AMM2585	
	157	Not used	CASTER CAUTION CARD	Not used	ARM1117	
NSP	165	CUSHION B	CUSHION E	AHA2075	AHA2081	
NSP	167	CUSHION D	Not used	AHA2077	Not used	
	168	CARD BOARD CASE (60)	CARD BOARD CASE (51)	AHB1154	AHB1152	
	169	CARD BOARD SPACER (60)	CARD BOARD SPACER (51P)	AHB1162	AHB1172	
	172	UPPER CARTON (60P)	UPPER CARTON (51P)	AHD2837	AHD2838	
	173	UNDER CARTON (60P)	UNDER CARTON (51P)	AHD2843	AHD2844	
NSP	176	PACKING SHEET (60)	PACKING SHEET (50,45)	AHG1230	AHG1120	
NSP	177	VINYL SHEET 60 UPPER	VINYL SHEET XL	AHG1233	AHG1095	
NSP	178	VINYL SHEET 60 UNDER	VINYL SHEET MS	AHG1234	AHG1258	
NSP	179	PACKING SHEET 60L	PACKING SHEET	AHG1235	AHG1156	
	185	CASTER	CASTER	AMR2547	AMR2863	

3. SCHEMATIC DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS

(Type 5A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance:(F): ± 1%, (G): ± 2%, (K): ± 10%, (M): ± 20% or ± 5% unless otherwise noted.

4. CAPACITORS:
Unit : p:pF or μF unless otherwise noted.
Ratings : capacitor (μF) / voltage (V) unless otherwise noted.
Rated voltage : 50V except for electrolytic capacitors.

5. COILS:
Unit : m:mH or μH unless otherwise noted.

6. VOLTAGE AND CURRENT:
▭ or ← V :
DC voltage (V) at no input signal unless otherwise noted.
Value in ( ) is DC voltage at color bar signal input state.
⇐mA or ←mA :
DC current at no input signal unless otherwise noted.

7. OTHERS:
- ⊘ or ⊘ : Adjusting point.
- ◁ : Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by ☆ are important parts which relate to X-rays radiation. If any of these parts needs to be replaced, always replace with specified parts.
- Parts marked by × are important parts which relate to X-rays radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by × is replaced, there is danger of being exposed to X-rays.

8. SCH – □ ON THE SCHEMATIC DIAGRAM:
- SCH–□ indicates the drawing number of the schematic diagram.

(SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position) :

MAIN SW ASSY
S3441 : MAIN POWER

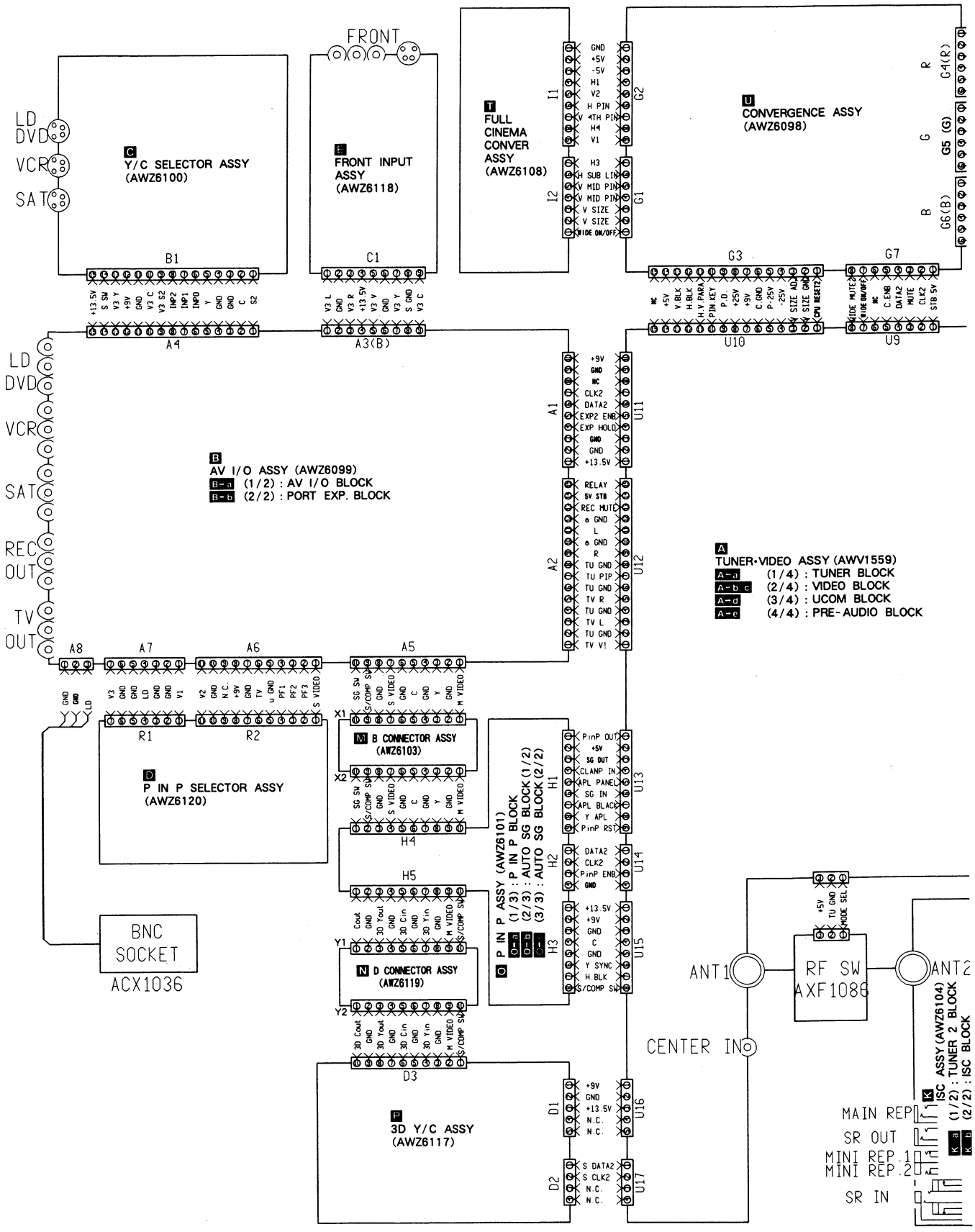
FRONT CONTROL ASSY
S3881 : CHANNEL –
S3882 : INPUT SELECTOR
S3883 : POWER STANDBY/ON
S3884 : VOLUME +
S3885 : VOLUME –
S3886 : CHANNEL +
S3887 : FACTORY ADJ
S3888 : RETURN
S3889 : SCREEN MODE
S3890 : DIGITAL P IN P INPUT
S3891 : DIGITAL P IN P ON/OFF
S3892 : ANTENNA SELECTOR

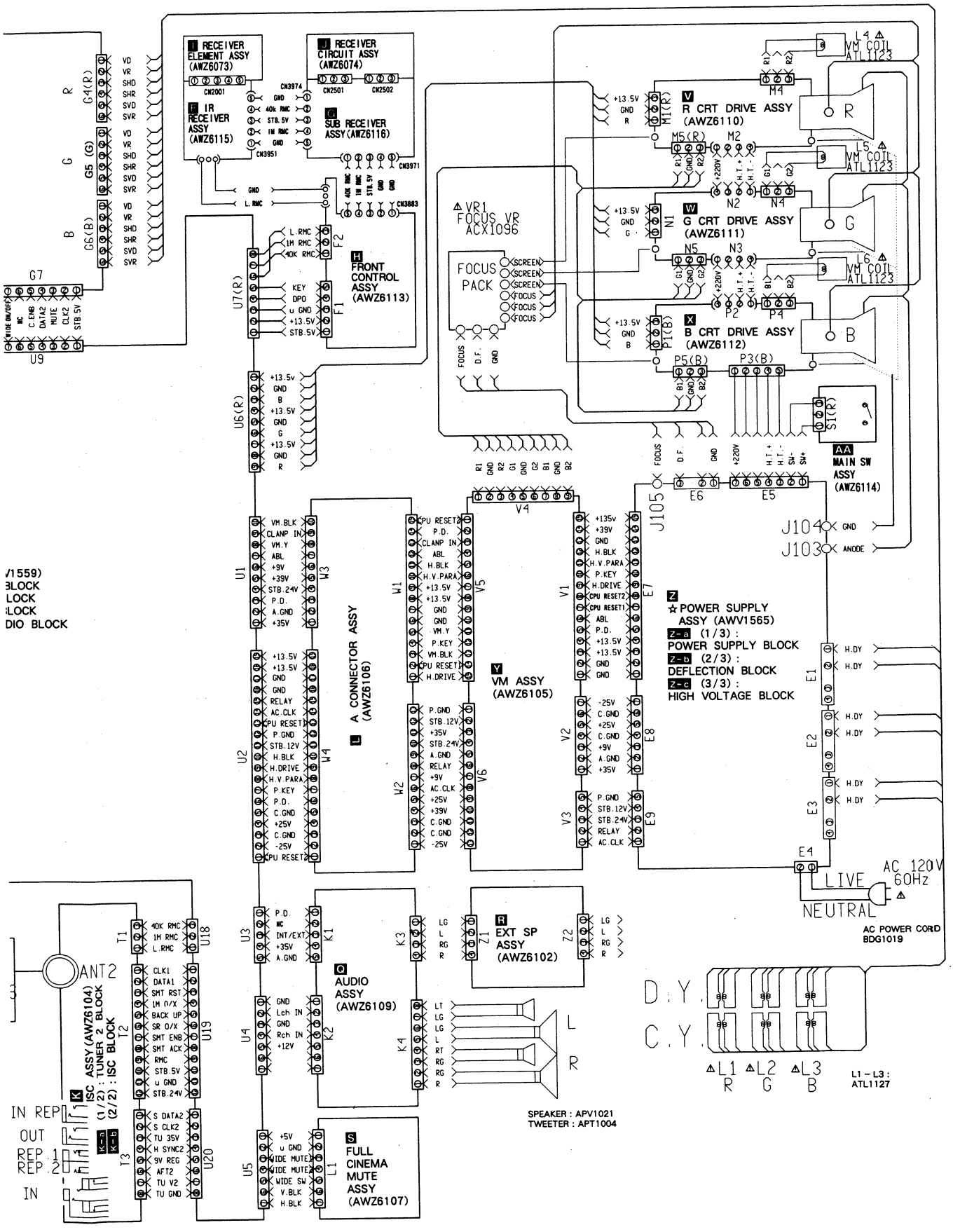
10. SIGNAL ROUTE:

- : Video signal route
- : Audio signal route (L ch)
- (C) : Composite audio signal route
- : Y signal route
- : C signal route
- (M) : Video signal route (Main picture)
- (S) : Video signal route (Sub picture)
- (S) : Y signal route (Sub picture)
- (S) : C signal route (Sub picture)
- : H. deflection signal route
- : V. deflection signal route

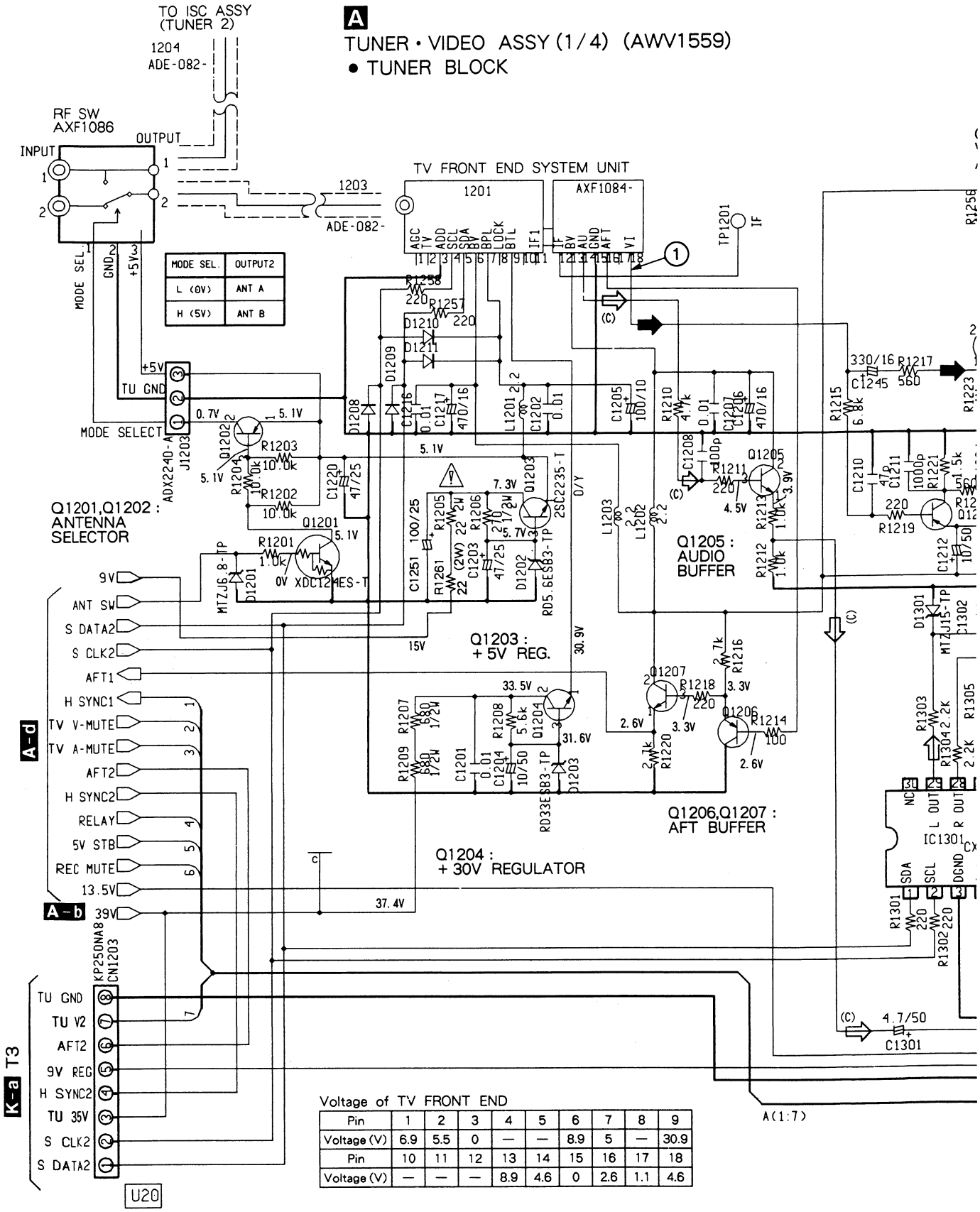
- (R) : R-Y signal route
- (G) : G-Y signal route
- (B) : B-Y signal route
- (R) : R signal route
- (G) : G signal route
- (B) : B signal route

3.1 OVERALL WIRING DIAGRAM



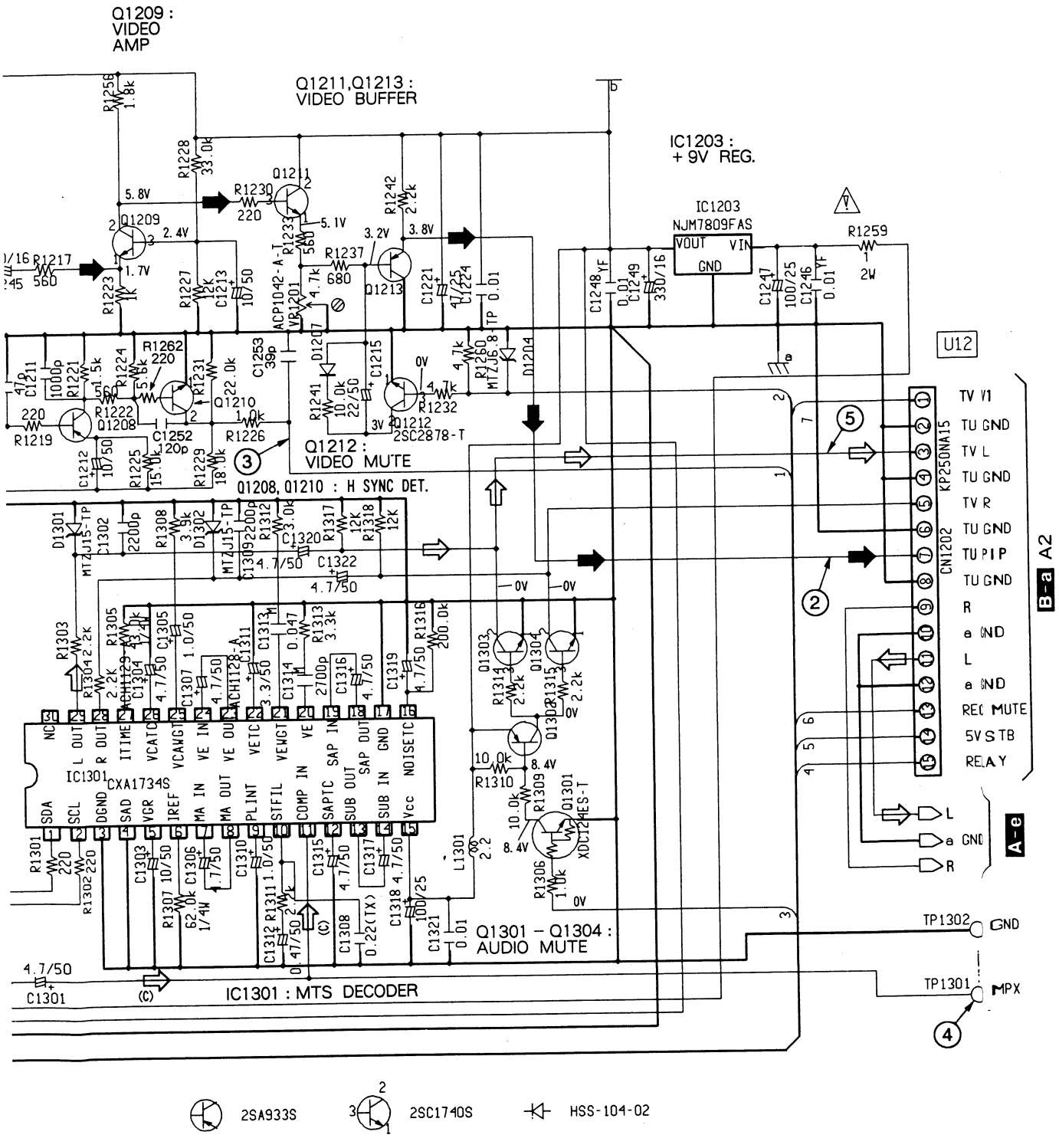

I RECEIVER ELEMENT ASSY (AWZ6073)
J RECEIVER CIRCUIT ASSY (AWZ6074)
F IR RECEIVER ASSY (AWZ6115)
G SUB RECEIVER ASSY (AWZ6116)
H FRONT CONTROL ASSY (AWZ6113)
V R CRT DRIVE ASSY (AWZ6110)
W G CRT DRIVE ASSY (AWZ6111)
X B CRT DRIVE ASSY (AWZ6112)
AA MAIN SW ASSY (AWZ6114)
Z ☆POWER SUPPLY ASSY (AWV1565)
Z-a (1/3) : POWER SUPPLY BLOCK
Z-b (2/3) : DEFLECTION BLOCK
Z-c (3/3) : HIGH VOLTAGE BLOCK
L A CONNECTOR ASSY (AWZ6106)
Y VM ASSY (AWZ6105)
R EXT SP ASSY (AWZ6102)
Q AUDIO ASSY (AWZ6109)
S FULL CINEMA MUTE ASSY (AWZ6107)
K ISC ASSY (AWZ6104) (1/2) : TUNER 2 BLOCK (2/2) : ISC BLOCK
FOCUS VR ACX1096
FOCUS PACK
AC 120V 60Hz
LIVE
NEUTRAL
AC POWER CORD BDG1019
SPEAKER : APV1021
TWEETER : APT1004
L1 - L3 : ATL1127

3.2 TUNER • VIDEO ASSY (1/4)

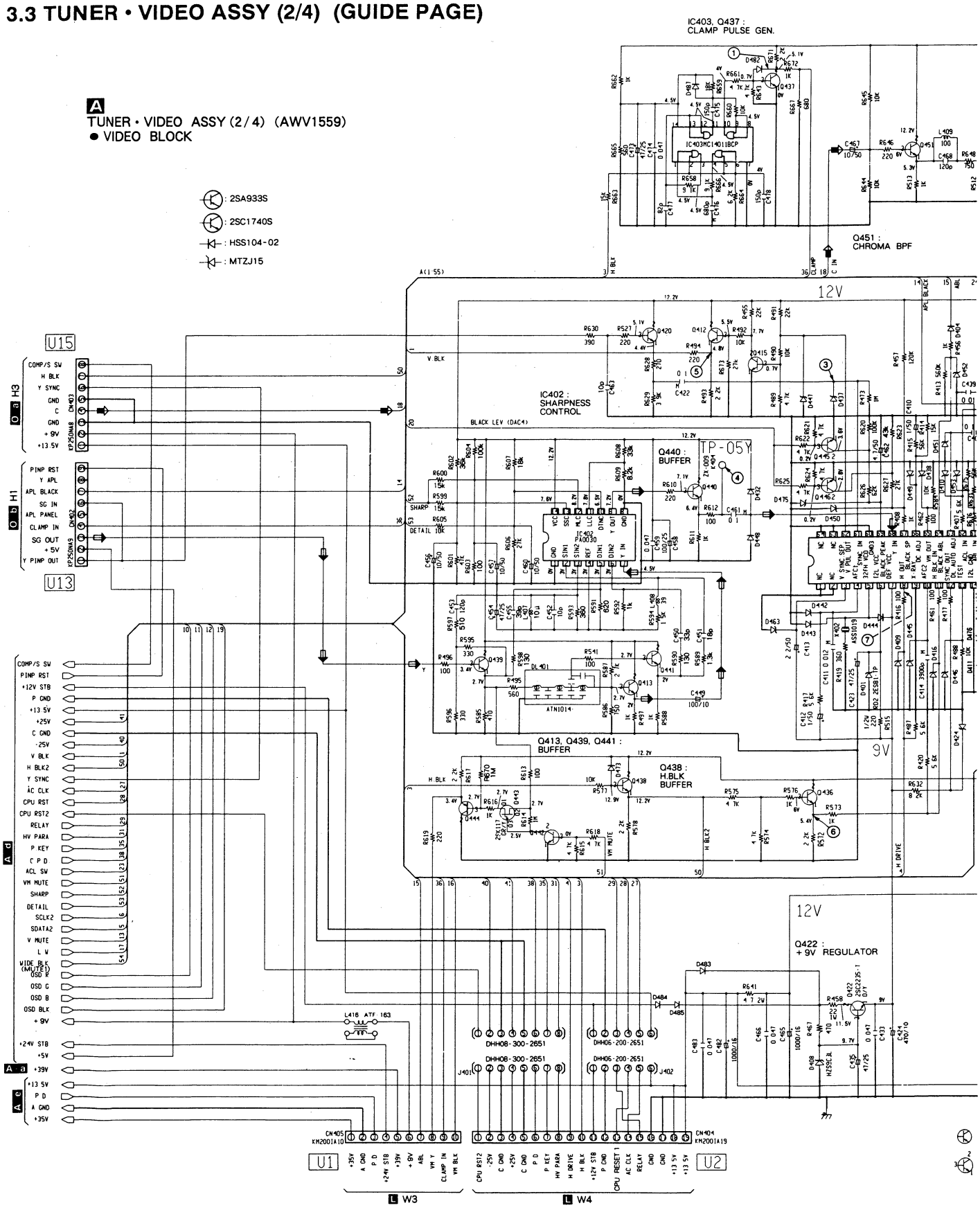


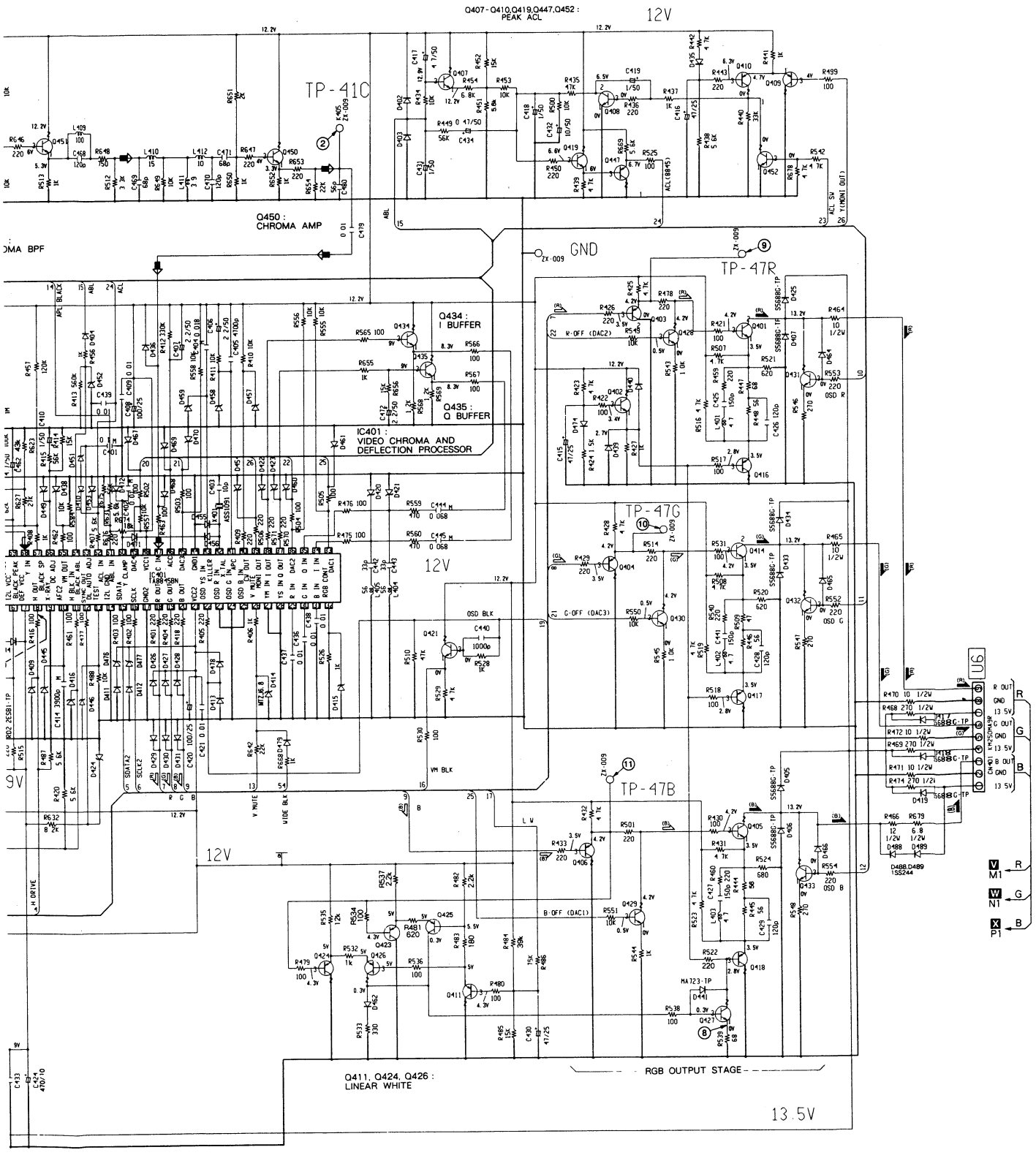
Voltage of TV FRONT END

Pin	1	2	3	4	5	6	7	8	9
Voltage (V)	6.9	5.5	0	—	—	8.9	5	—	30.9
Pin	10	11	12	13	14	15	16	17	18
Voltage (V)	—	—	—	8.9	4.6	0	2.6	1.1	4.6


Q1209 : VIDEO AMP
Q1211,Q1213 : VIDEO BUFFER
IC1203 : + 9V REG.
IC1203 NJM7809FAS
VOUT VIN GND
Q1212 : VIDEO MUTE
Q1208, Q1210 : H SYNC DET.
IC1301 CXA1734S
IC1301 : MTS DECODER
Q1301 - Q1304 : AUDIO MUTE
U12
CN1202 KP250NA15
TV V1
TU GND
TV L
TU GND
TV R
TU GND
TU PIP
TU GND
R
e GND
L
e GND
REC MUTE
5V STB
RELAY
L
e GND
R
TP1302 GND
TP1301 MPX
B-a A2
A-e
2SA933S
2SC1740S
HSS-104-02

3.3 TUNER • VIDEO ASSY (2/4) (GUIDE PAGE)

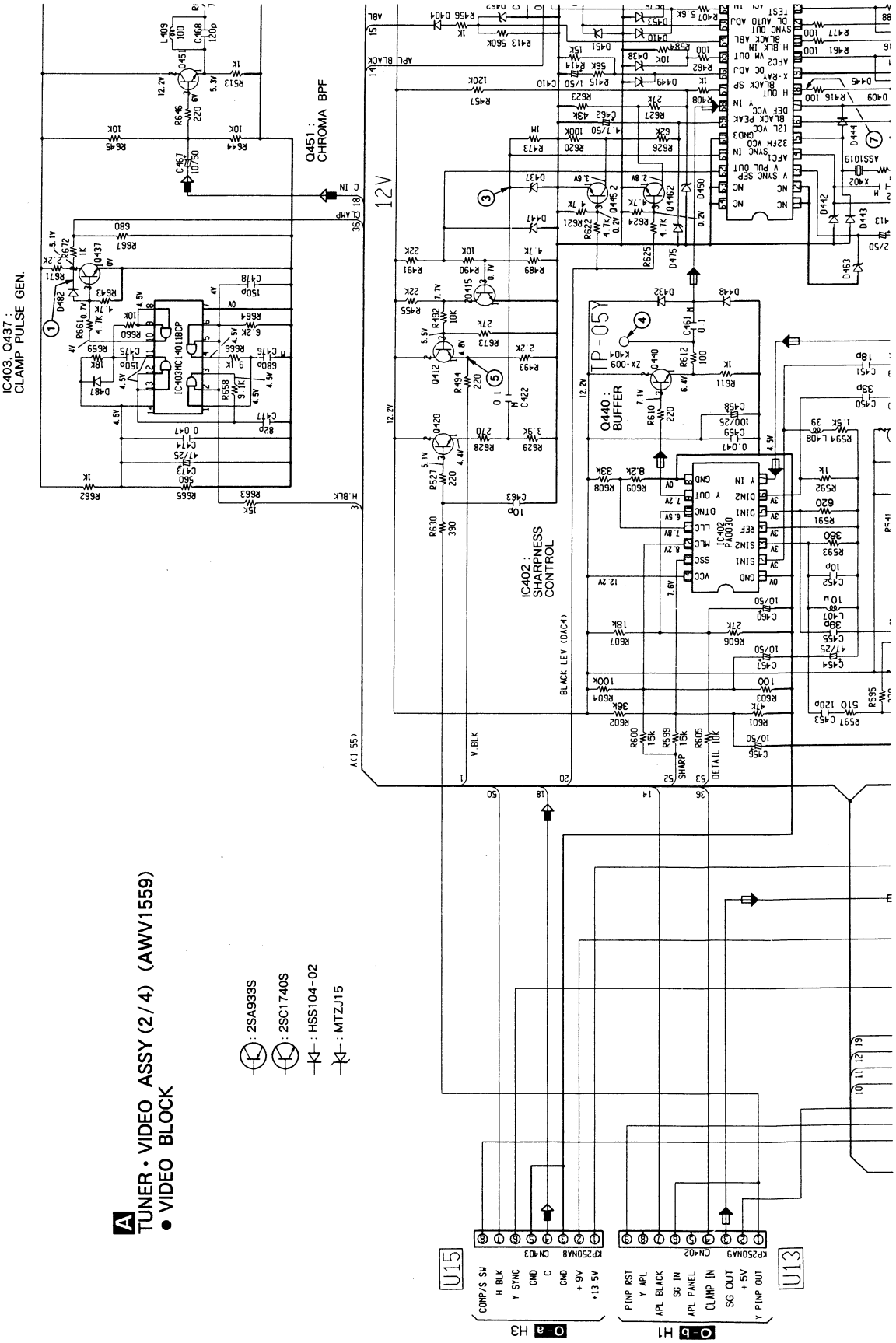




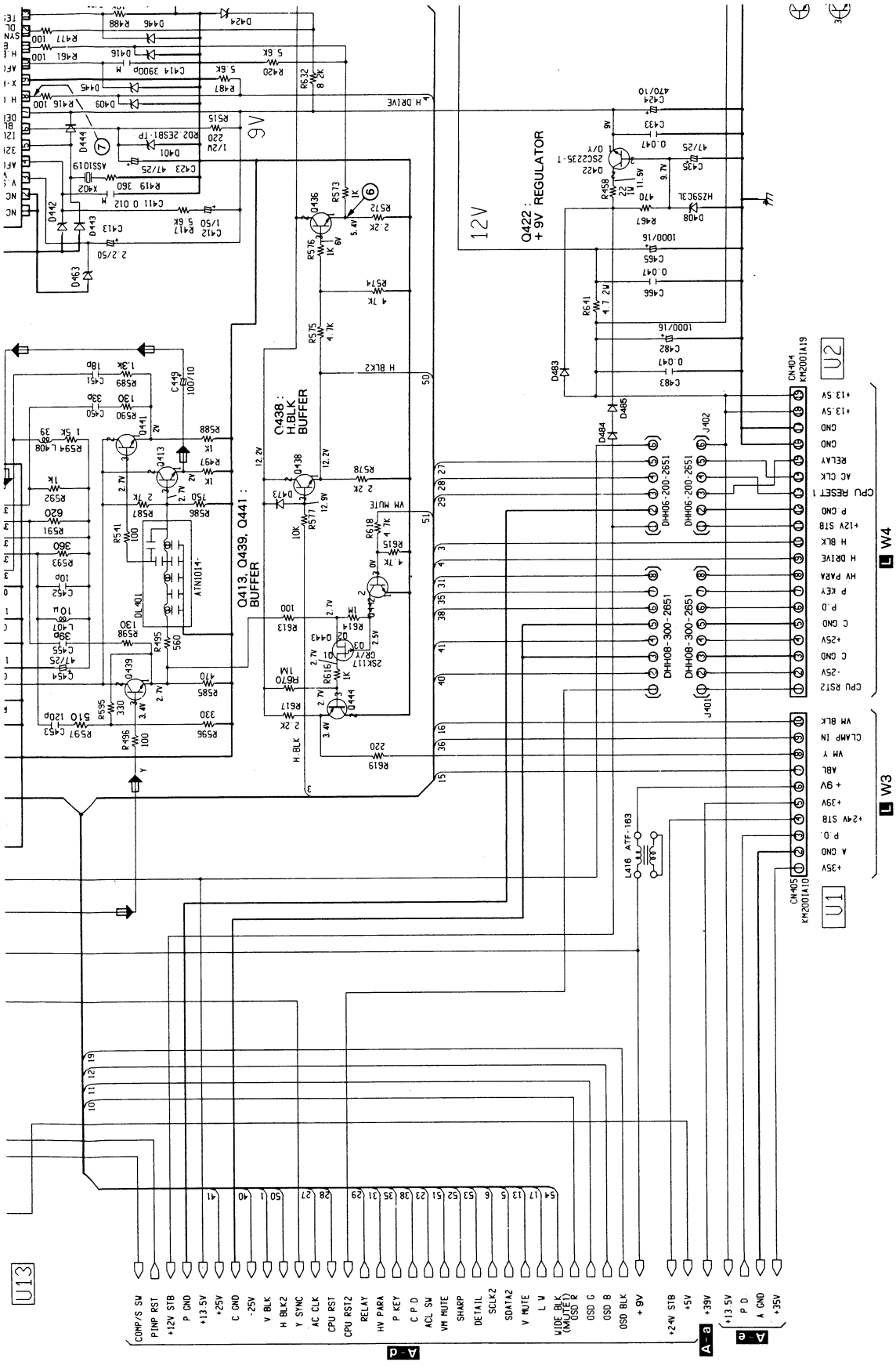
2SA933S HSS104-02

2SC1740S MTZJ15

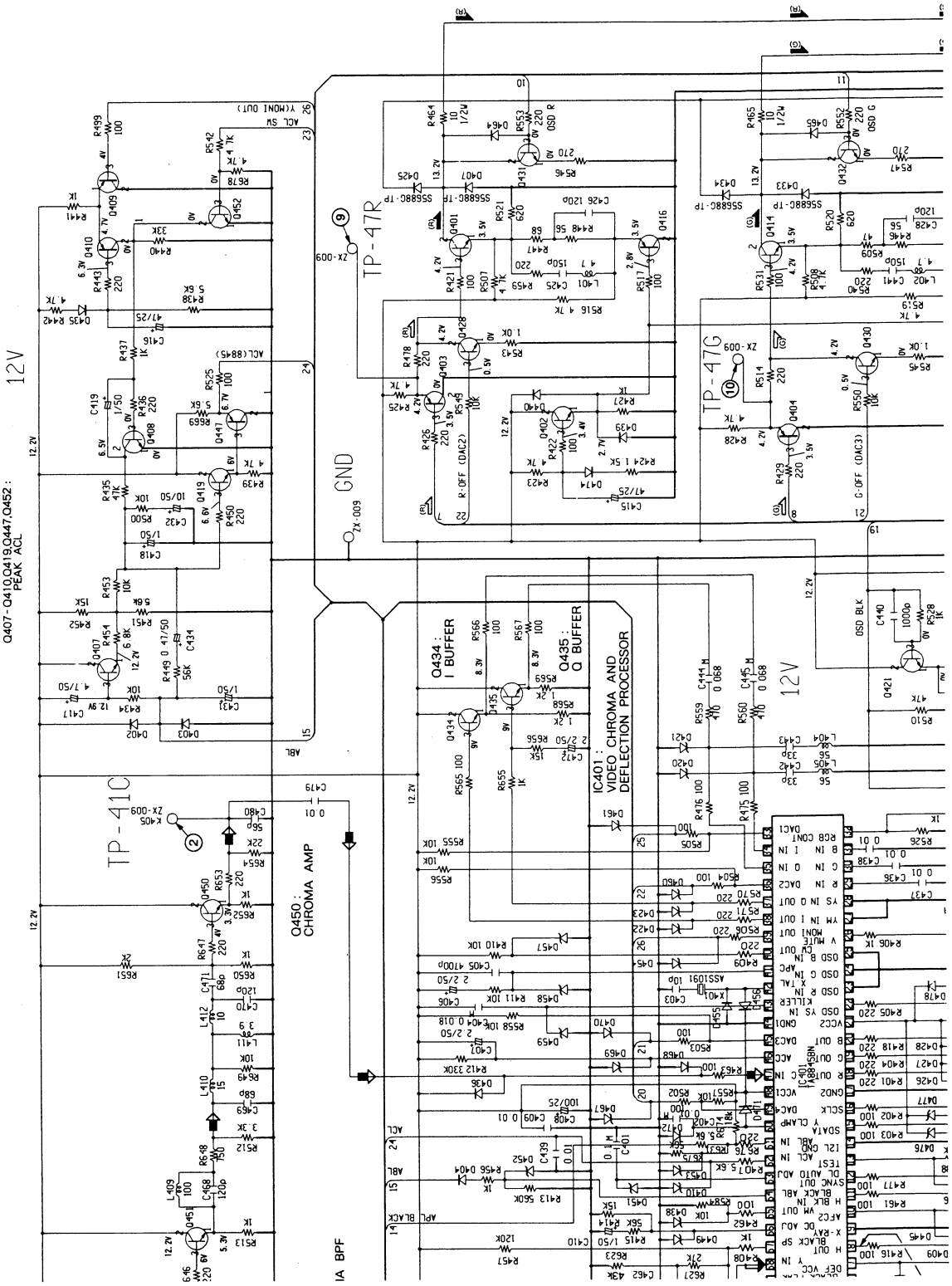
A-b A-c



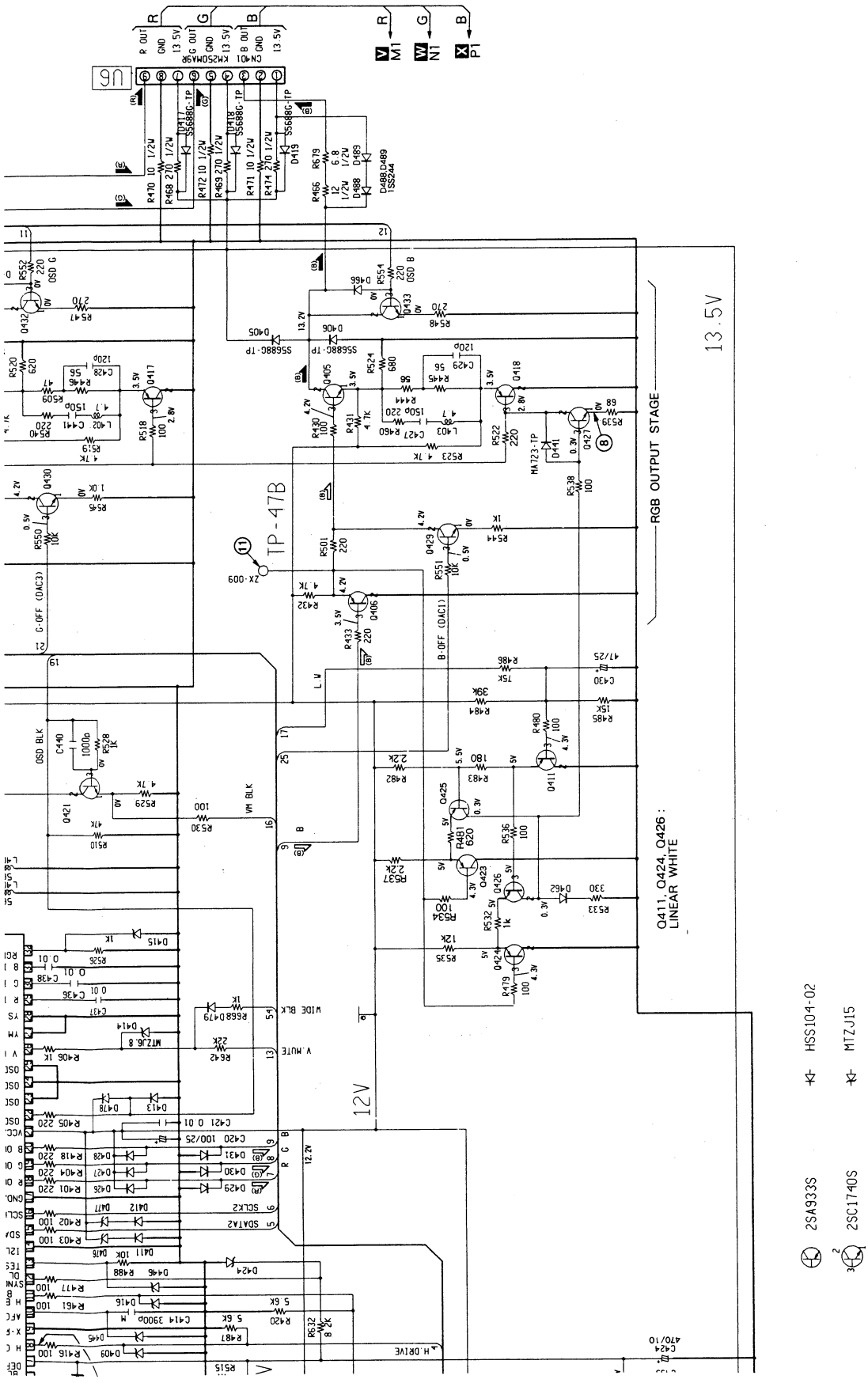
A TUNER • VIDEO ASSY (2/4) (AWV1559)
• VIDEO BLOCK


12V
Q422 : +9V REGULATOR
9V
Q438 : H.BLK BUFFER
Q413, Q439, Q441 : BUFFER
U2
U1
U13
CN404 KM2001A19
CN405 KM2001A10
W4
W3
CPU RESET
+12V STB
+13.5V
GND
RELAY
AC CLK
P KEY
H DRIVE
HV PARA
H BLK
VM MUTE
P.O
C GND
+25V
-25V
CPU RST2
+35V
A GND
+24V STB
+39V
+9V
ABL
VM Y
CLAMP IN
VM BLK
COMP/S SW
PINP RST
+12V STB
P GND
+13.5V
+25V
C GND
-25V
V BLK
H BLK2
Y SYNC
AC CLK
CPU RST
CPU RST2
RELAY
HV PARA
P KEY
C P.O
ACL SW
VM MUTE
SHARP
DETAIL
SCLK2
SDATA2
V MUTE
L W
VIDE BLK (MUTE)
OSD R
OSD G
OSD B
OSD BLK
+9V
+24V STB
+5V
+39V
+13.5V
P.O
A GND
+35V
A-a
A-d
A-e

A-b A-c

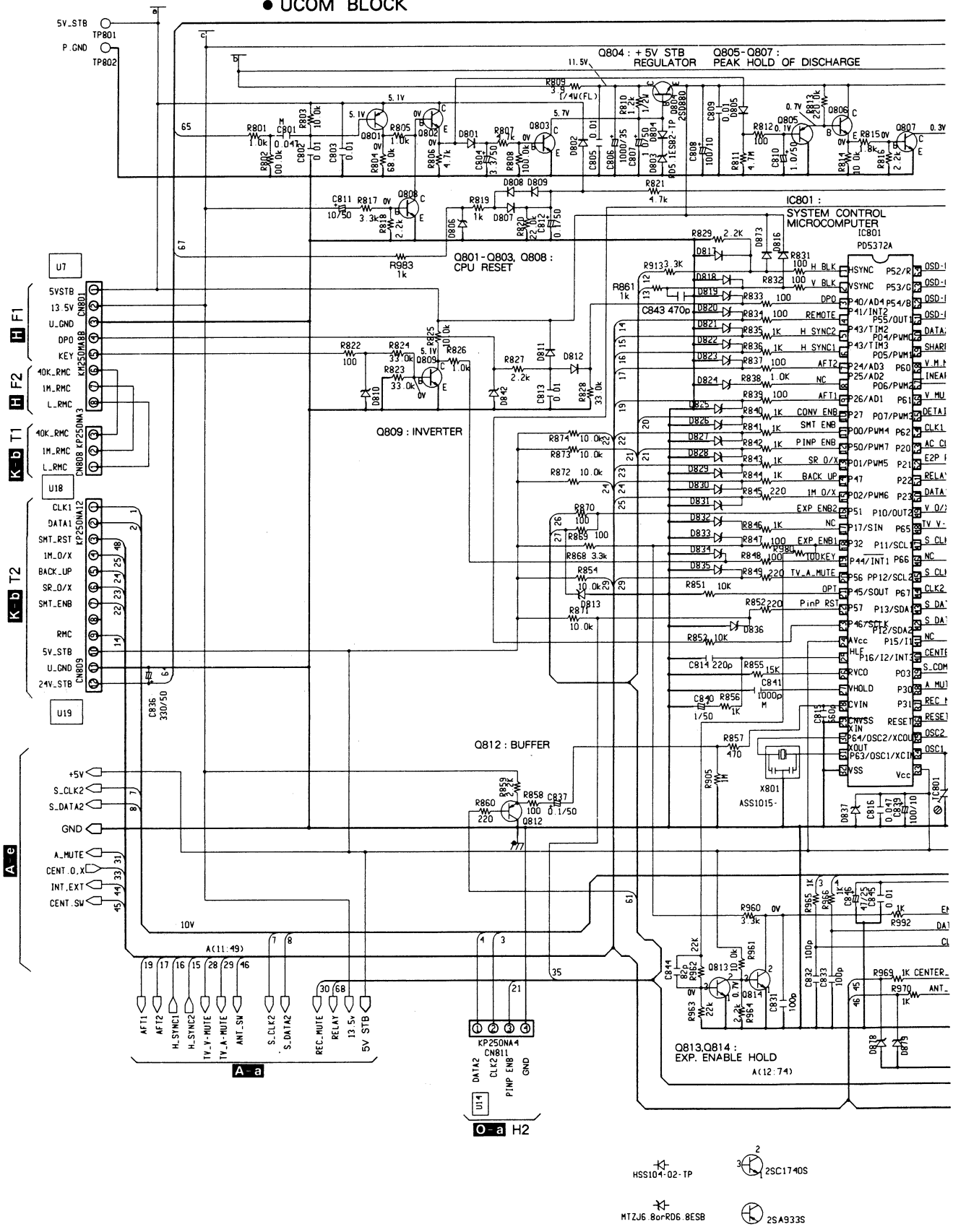

TP-47R
TP-47G
TP-41C
GND
12V
Q434 : I BUFFER
Q435 : Q BUFFER
IC401 : VIDEO CHROMA AND DEFLECTION PROCESSOR
Q450 : CHROMA AMP
Q407-Q410,Q419,Q447,Q452 : PEAK ACL
R-OFF (DAC2)
G-OFF (DAC3)
OSD BLK

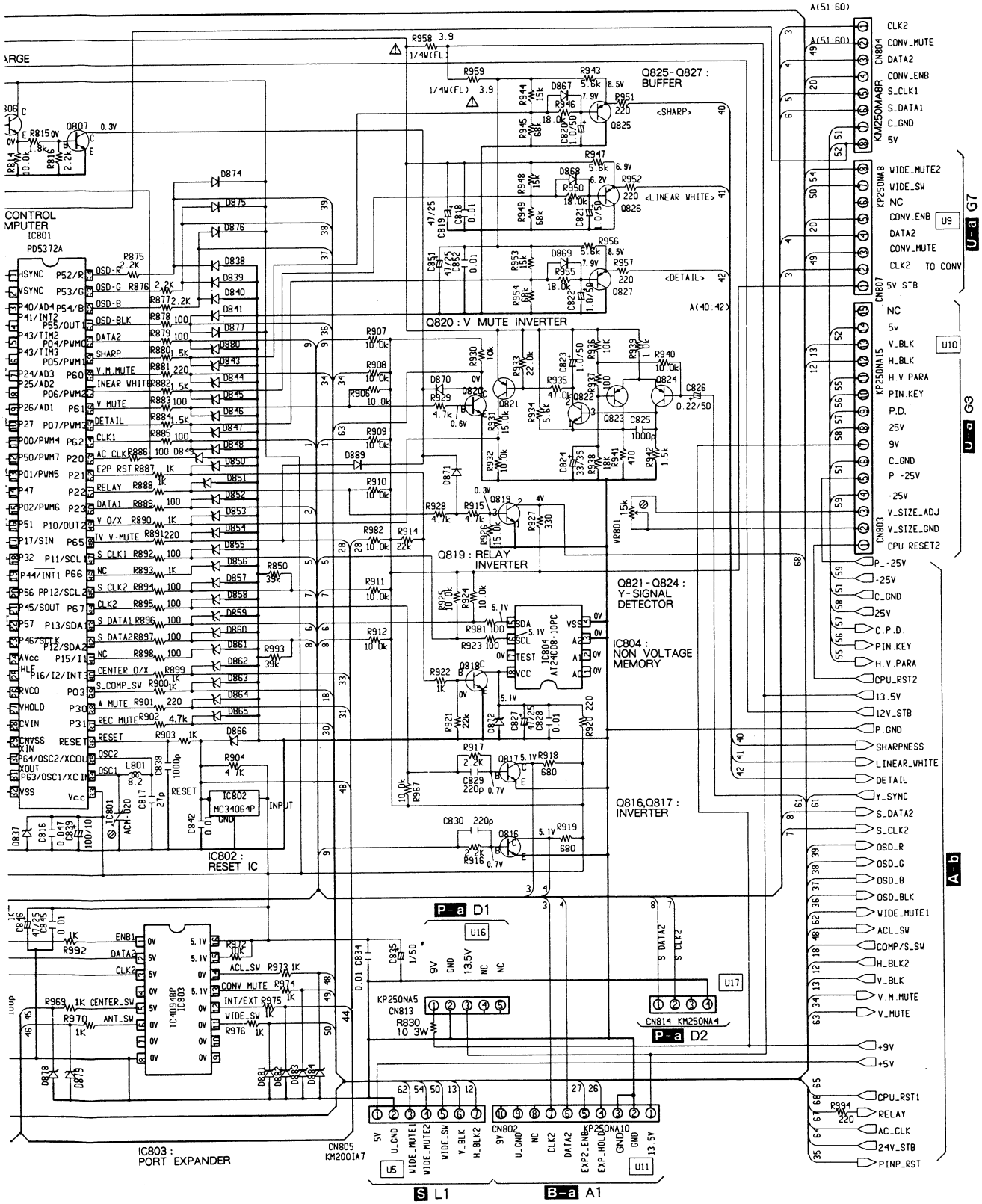
A-c


RGB OUTPUT STAGE
13.5V
12V
TP-47B
Q411, Q424, Q426 :
LINEAR WHITE
2SA933S
HSS104-02
2SC1740S
MTZJ15

3.4 TUNER • VIDEO ASSY (3/4)

A TUNER • VIDEO ASSY (3/4) (AWV1559)
• UCOM BLOCK



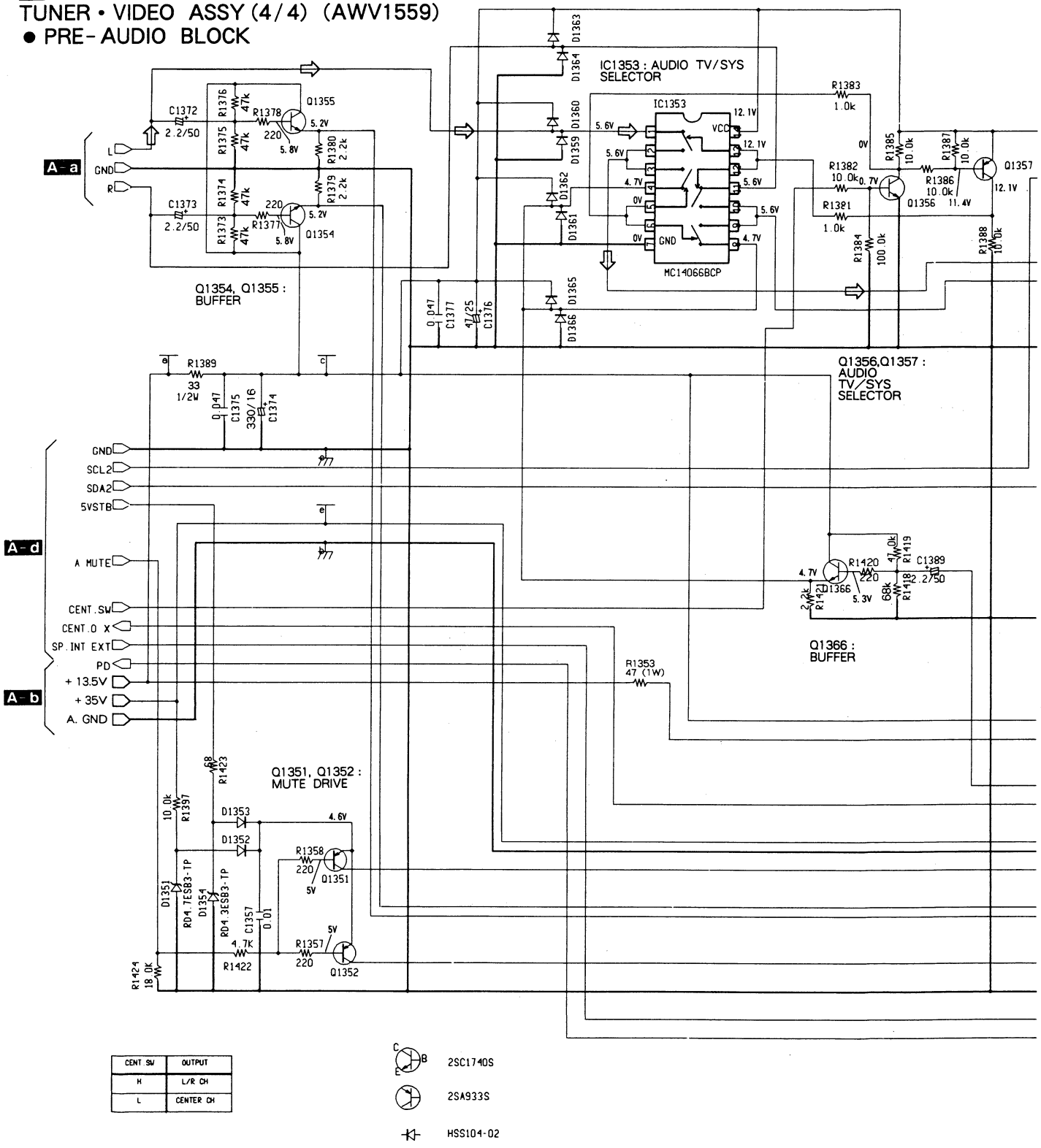

CONTROL MPUTER IC801 PD5372A
Q820 : V MUTE INVERTER
Q819 : RELAY INVERTER
Q825-Q827 : BUFFER
Q821-Q824 : Y-SIGNAL DETECTOR
IC804 : NON VOLTAGE MEMORY
Q816,Q817 : INVERTER
IC802 : RESET IC
IC803 : PORT EXPANDER
CN805 KM200IA7
CN807 KP250NA8
CN803 KP250NA15
CN804 KM250MA8R
CN802 KP250NA10
CN813 KP250NA5
CN814 KM250NA4
P-a D1
P-a D2
S L1
B-a A1
U-a G7
U-a G3
A-b

3.5 TUNER • VIDEO ASSY (4/4)

A

TUNER • VIDEO ASSY (4/4) (AWV1559)

● PRE-AUDIO BLOCK

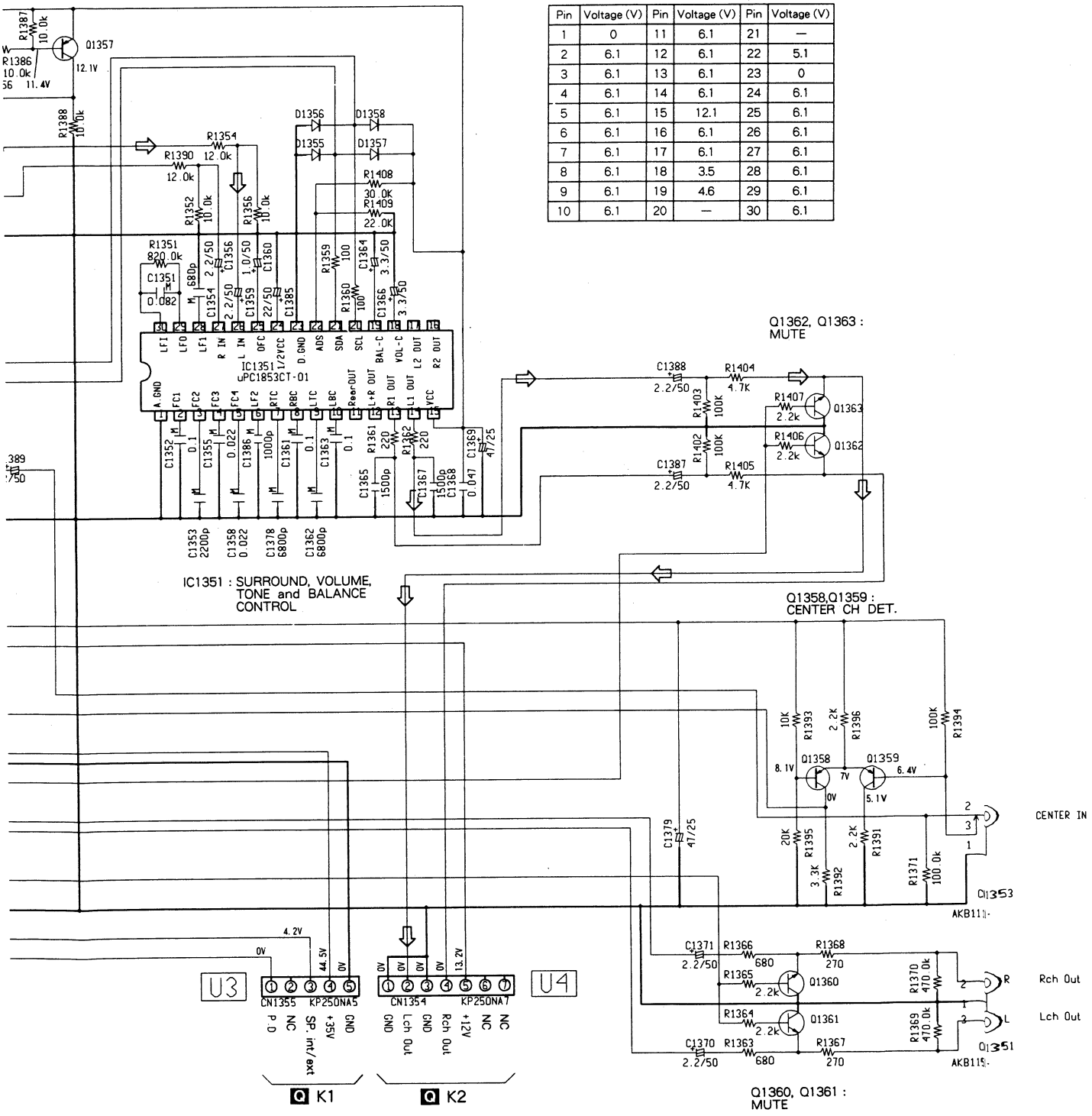


CENT SW	OUTPUT
H	L/R CH
L	CENTER CH

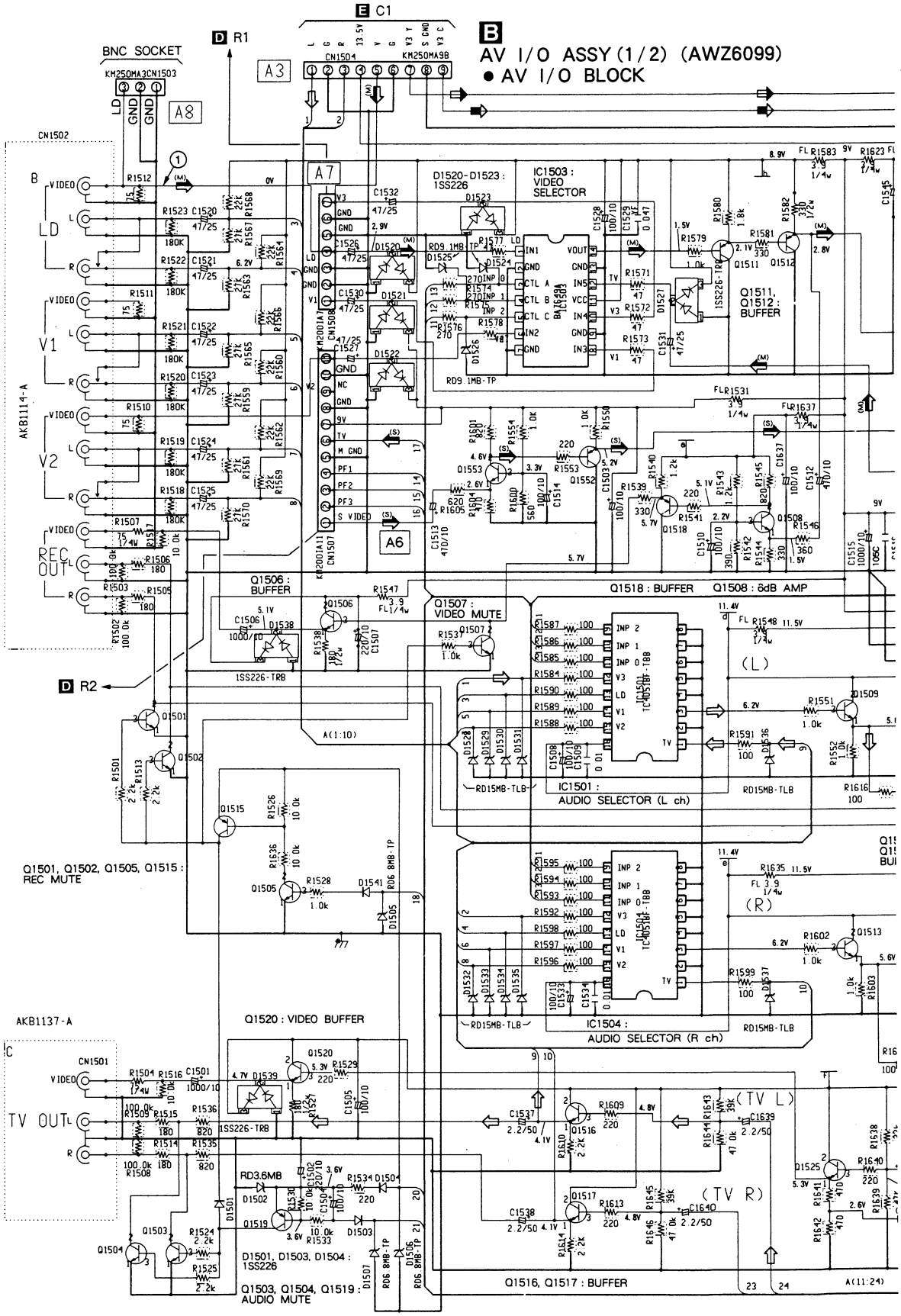
• Measuring condition
• SP SELECT : INTERNAL
• A Mute : OFF
• Volume : Min
• TREBLE, BASS, BALANCE : CENTER (STEP 0)
• Audio TV/SYS : TV

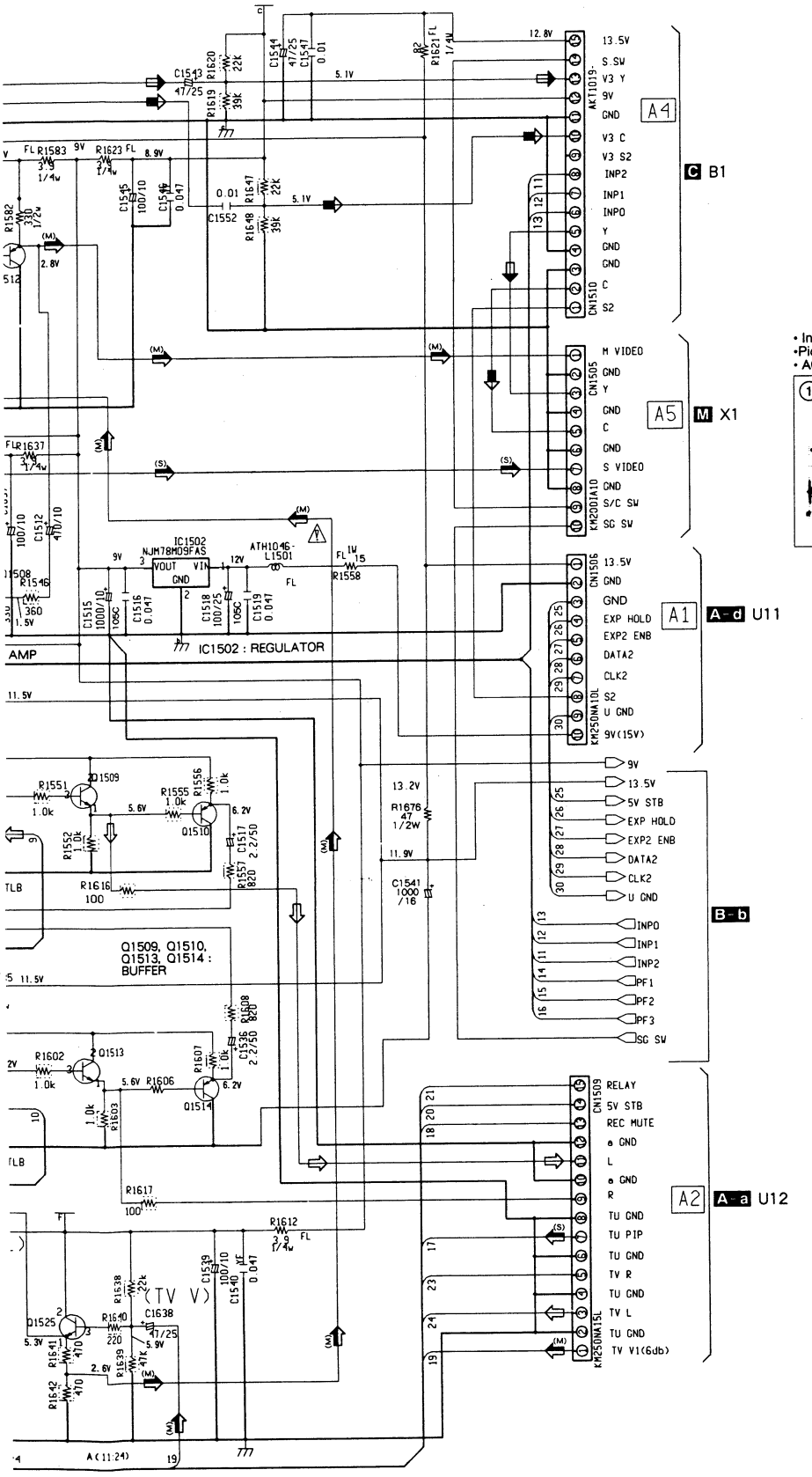
IC1351 (UPC1853CT-01)

Pin	Voltage (V)	Pin	Voltage (V)	Pin	Voltage (V)
1	0	11	6.1	21	—
2	6.1	12	6.1	22	5.1
3	6.1	13	6.1	23	0
4	6.1	14	6.1	24	6.1
5	6.1	15	12.1	25	6.1
6	6.1	16	6.1	26	6.1
7	6.1	17	6.1	27	6.1
8	6.1	18	3.5	28	6.1
9	6.1	19	4.6	29	6.1
10	6.1	20	—	30	6.1



3.6 AV I/O ASSY (1/2)

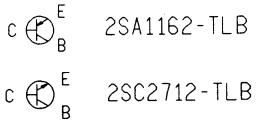




OUT	INP 0	INP 1	INP 2
LO	L	L	L
V1	H	L	L
V2	L	H	L
V3	H	H	L
TV	L	L	H

• Input signal : Color bar
•Picture quality : Standard
• AC range

① LD VIDEO IN
V : 0.2V/div. , H : 20 μ S/div.



IC1501 (TC4051BF)

Pin	Voltage (V)	Pin	Voltage (V)
1	4.1	9	0
2	0	10	0
3	6.2	11	0
4	0	12	6.2
5	0	13	6.2
6	0	14	6.2
7	0	15	6.2
8	0	16	11.5

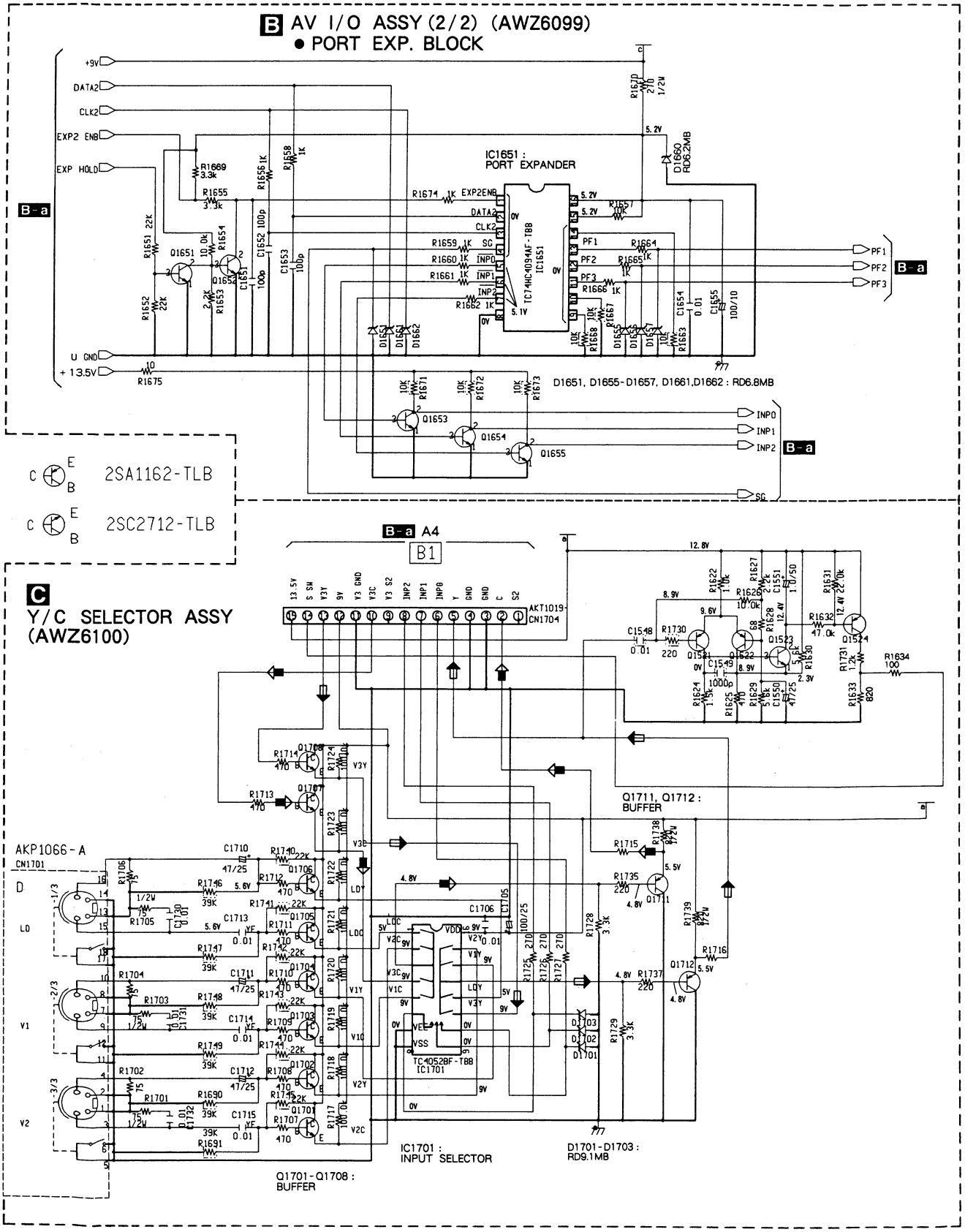
IC1503 (BA7649A)

Pin	Voltage (V)	Pin	Voltage (V)
1	2.9	8	2.6
2	0	9	0
3	0	10	2.6
4	0	11	8.9
5	0	12	3.3
6	2.6	13	0
7	0	14	1.5

IC1504 (TC4051BF)

Pin	Voltage (V)	Pin	Voltage (V)
1	4.1	9	0
2	0	10	0
3	6.2	11	0
4	0	12	6.2
5	0	13	6.2
6	0	14	6.2
7	0	15	6.2
8	0	16	11.5

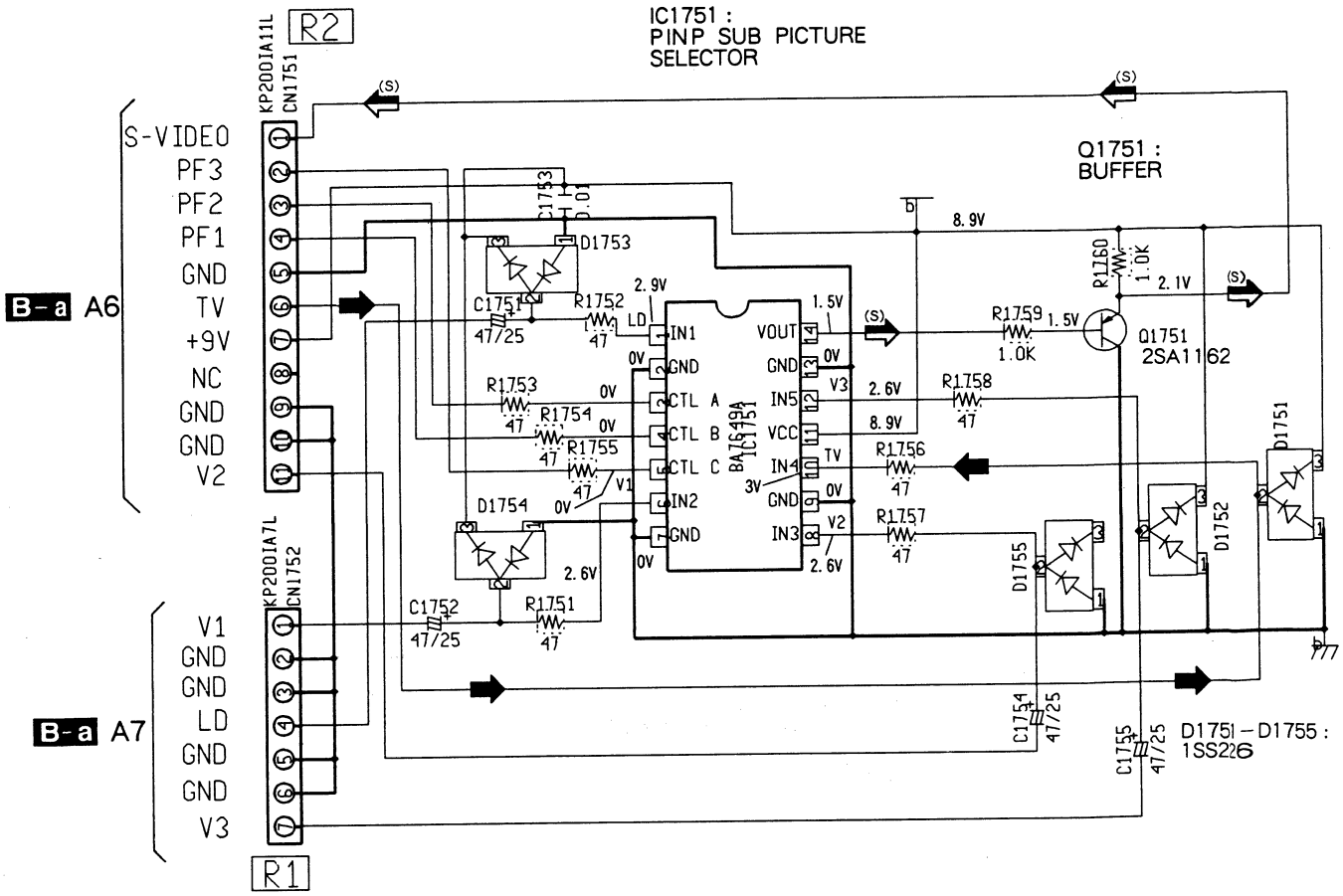
3.7 AV I/O ASSY (2/2) AND Y/C SELECTOR ASSEMBLIES



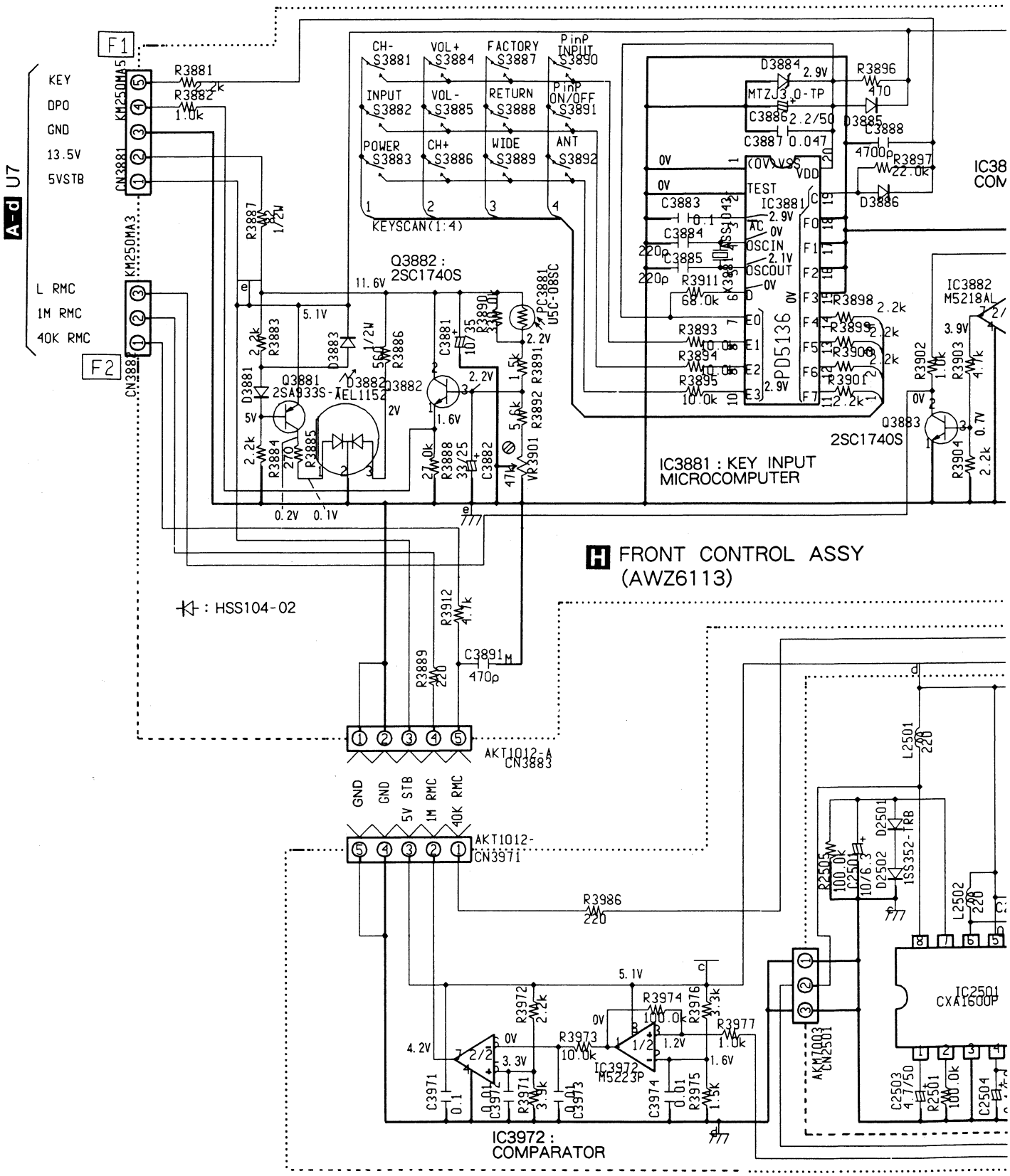
3.8 P IN P SELECTOR ASSY

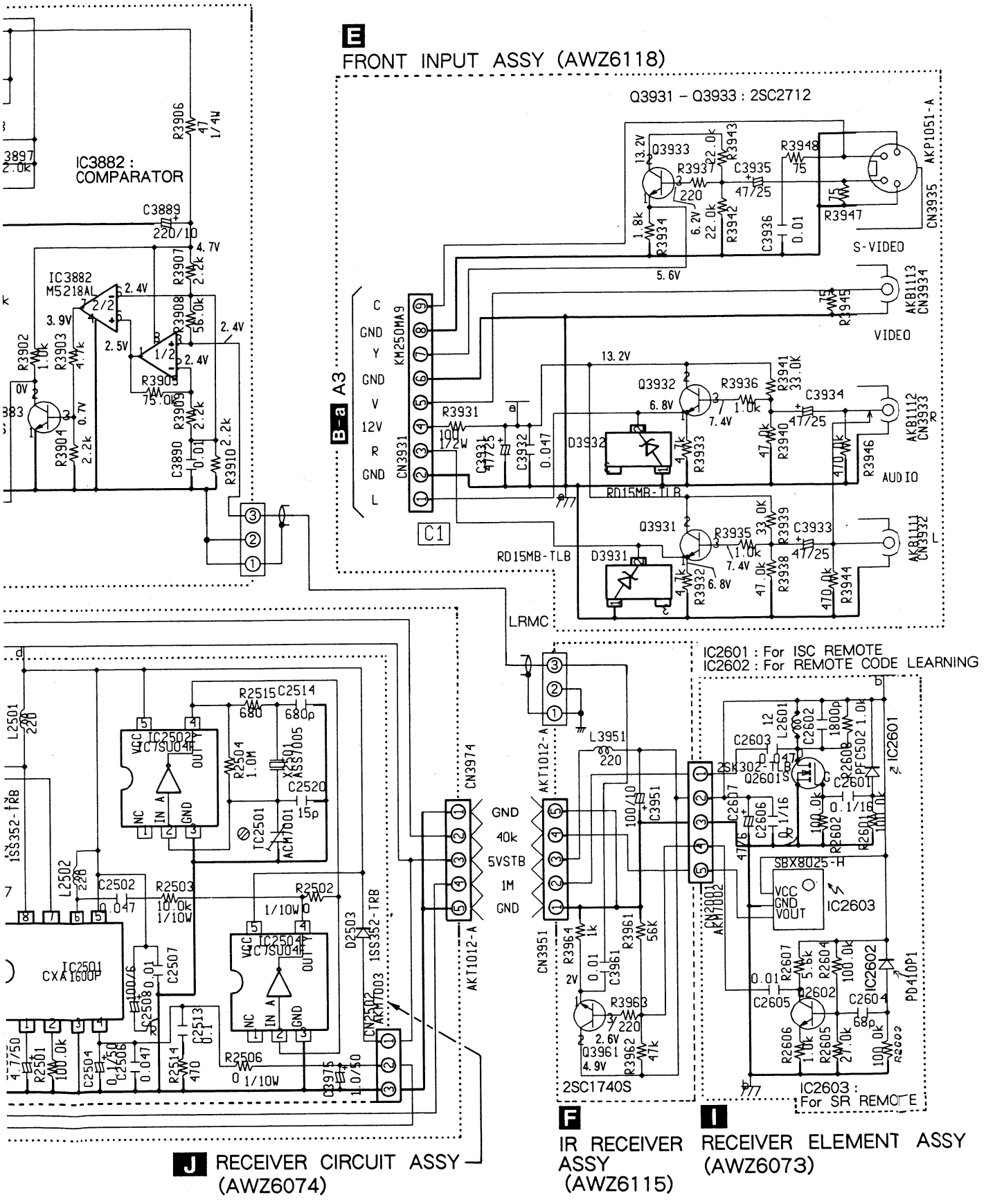
D

P IN P SELECTOR ASSY (AWZ6120)



3.9 FRONT INPUT, IR RECEIVER, SUB RECEIVER, FRONT CONTROL, RECEIVER ELEMENT AND RECEIVER CIRCUIT ASSEMBLIES



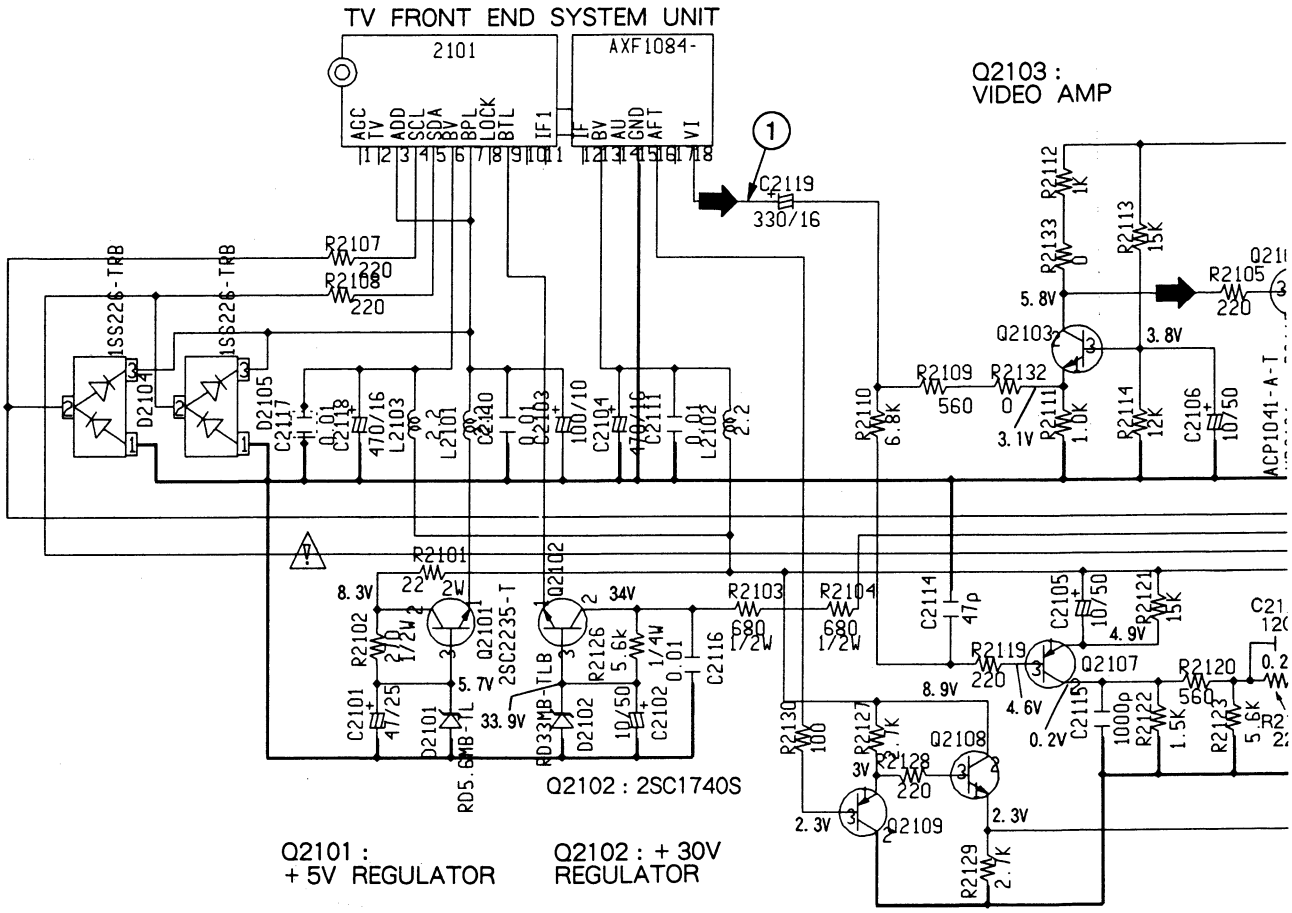

E
FRONT INPUT ASSY (AWZ6118)
Q3931 – Q3933 : 2SC2712
IC3882 : COMPARATOR
IC3882 M5218AL
B-a A3
CN3931
KM250MA9
C1
S-VIDEO
VIDEO
AUDIO
RD15MB-TLB
LRMC
CN3974
AKT1012-A
IC2601 : For ISC REMOTE
IC2602 : For REMOTE CODE LEARNING
IC2603 : For SR REMOTE
IC2603
SBX8025-H
IC2501
CXA1600P
2SC1740S
J RECEIVER CIRCUIT ASSY (AWZ6074)
F IR RECEIVER ASSY (AWZ6115)
I RECEIVER ELEMENT ASSY (AWZ6073)

3.10 ISC ASSY (1/2)

K

ISC ASSY (1/2) (AWZ6104)

• TUNER 2 BLOCK

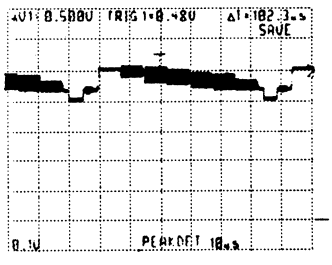


- ANTENNA SELECT : ANT A
- Video signal : NTSC color bar , 87.5% modulation
- Audio signal : 1kHz sinewave, ± 25kHz deviation
- DC range (unless otherwise noted)

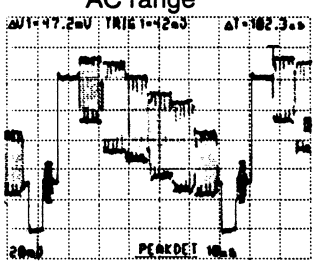
Voltage of TV FRONT END

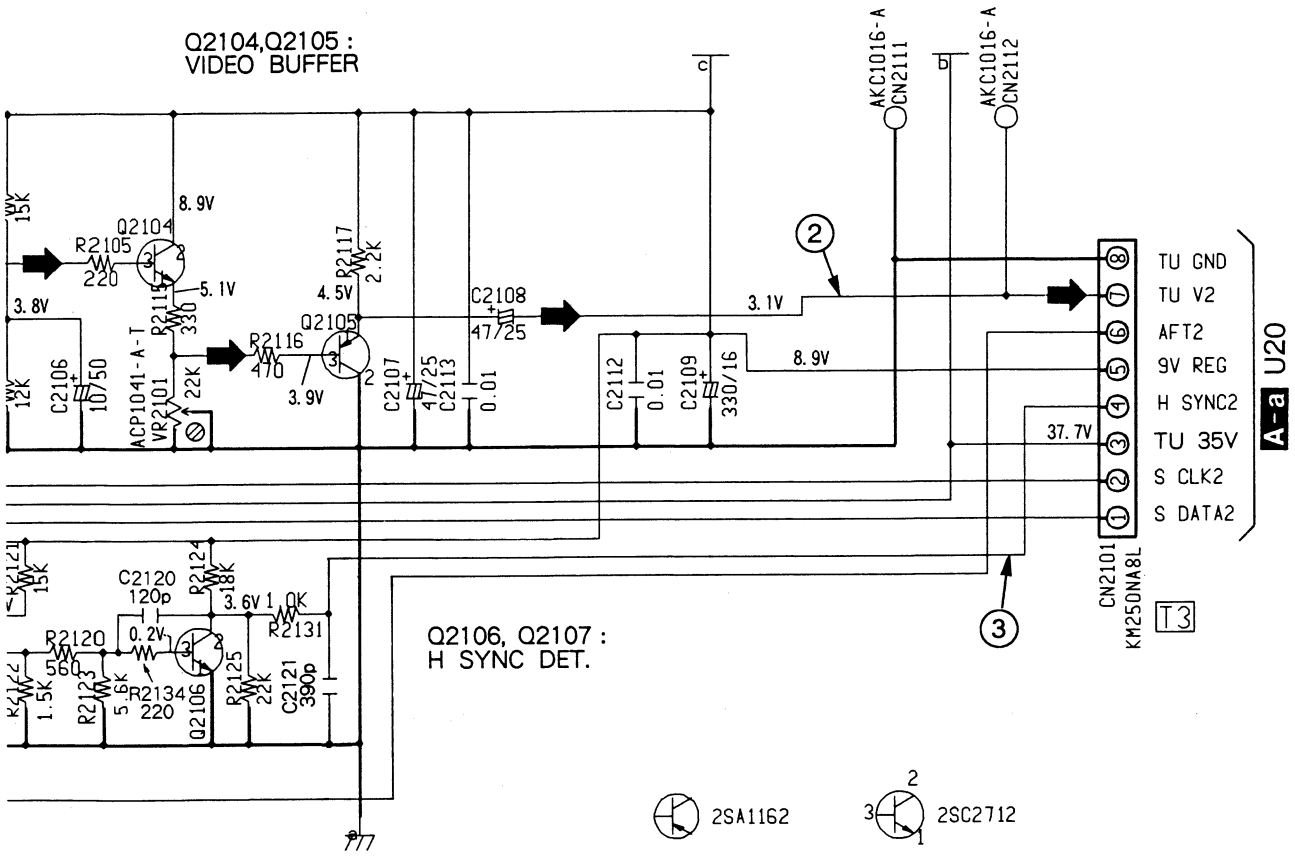
Pin	1	2	3	4	5	6	7	8	9
Voltage (V)	6.9	5.5	5	—	—	8.9	5	—	33.2
Pin	10	11	12	13	14	15	16	17	18
Voltage (V)	—	—	—	8.9	4.6	0	2.3	1.1	4.6

① -1/2 TV front end pin 18
V : 1V/div. , H : 10 μS/div.

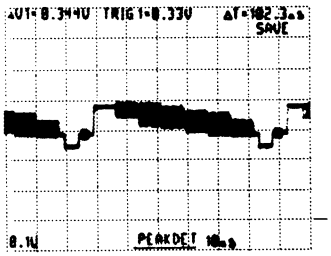


① -2/2 TV front end pin 18
V : 0.2V/div. , H : 10 μS/div.
AC range

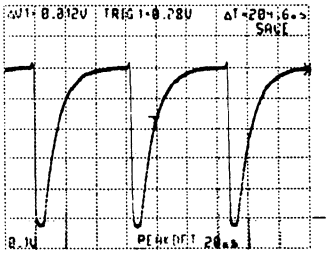




② T3-pin 7
V : 1V/div. , H : 10 μS/div.



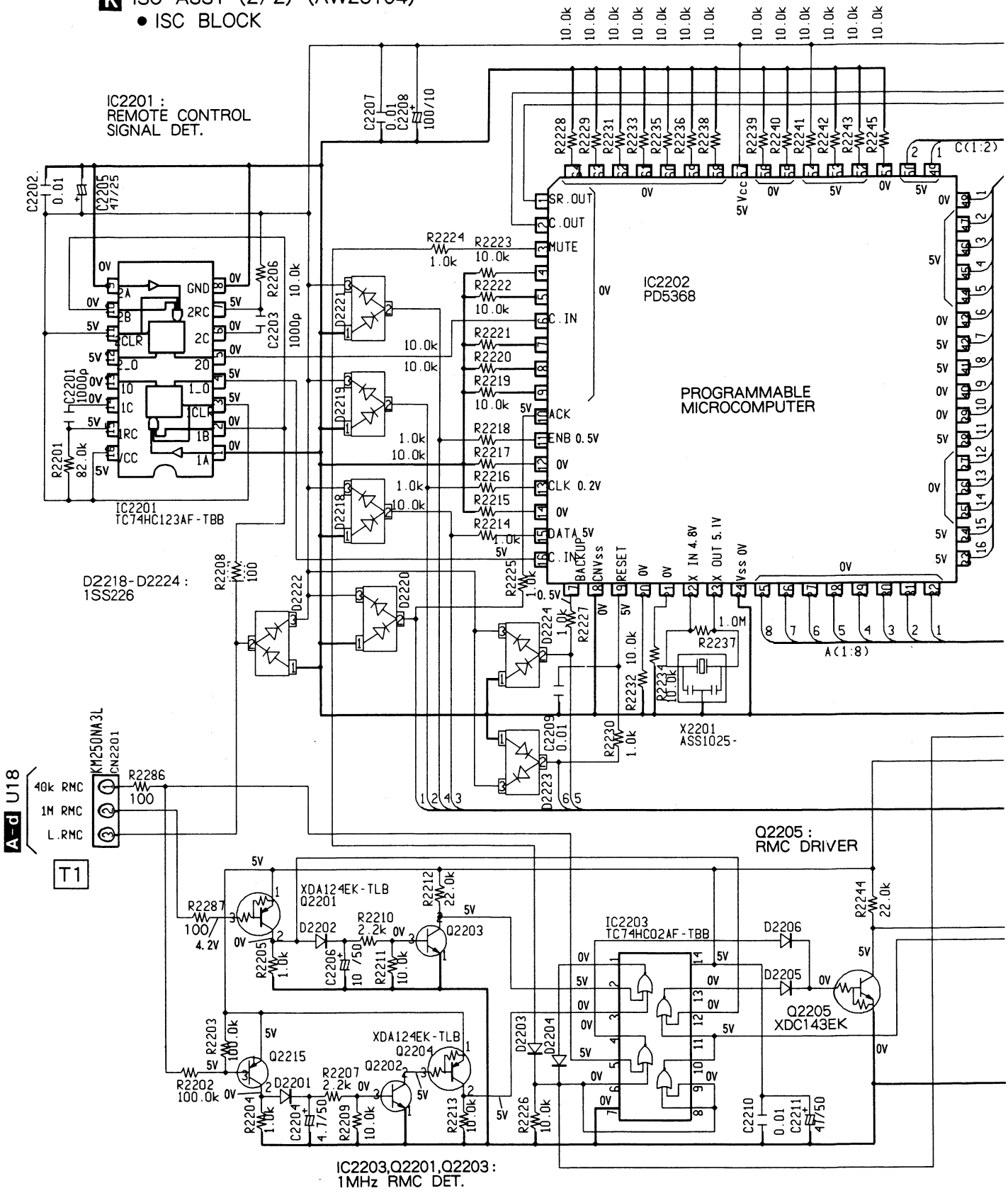
③ T3-pin 4
V : 1V/div. , H : 20 μS/div.

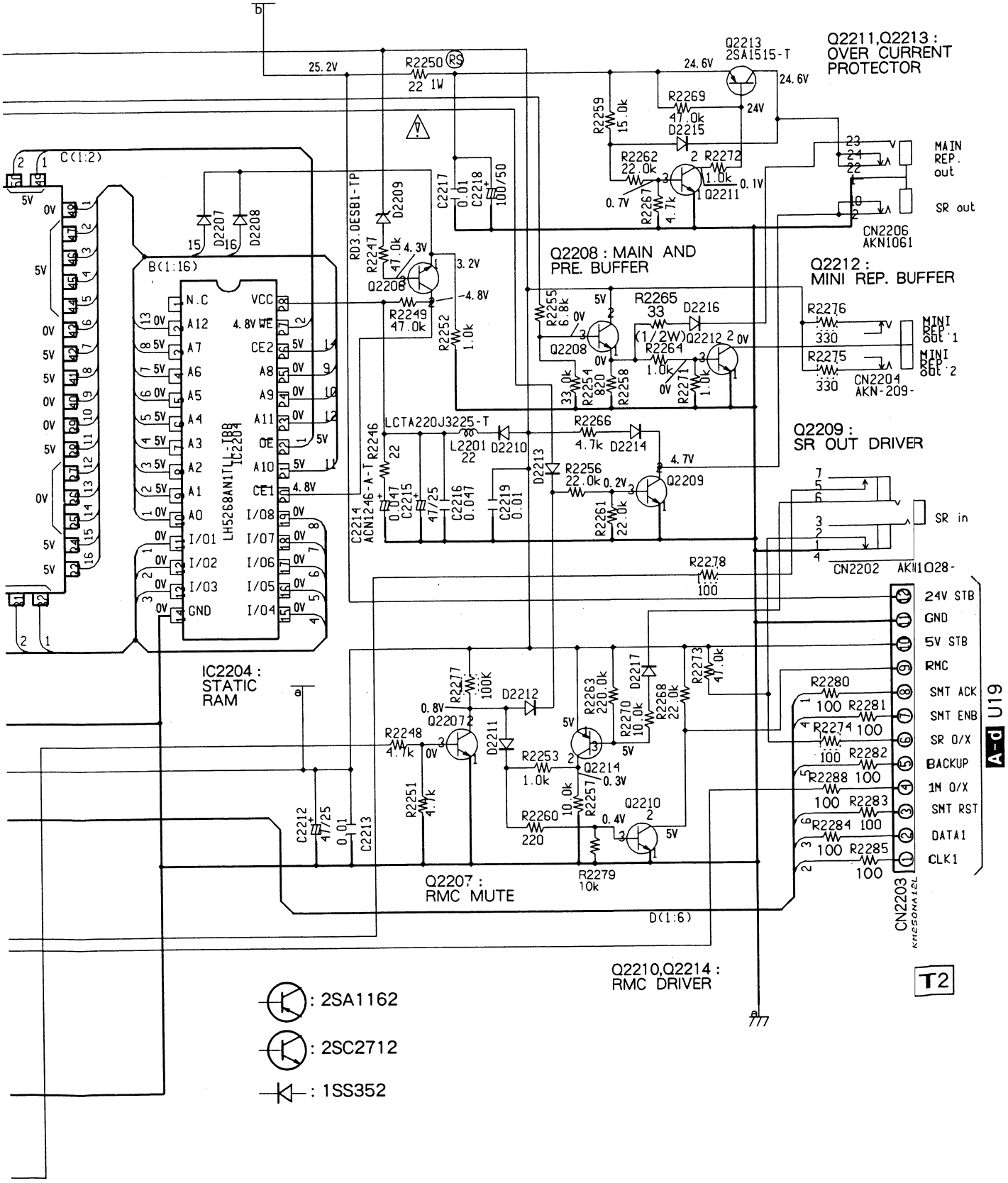


3.11 ISC ASSY (2/2)

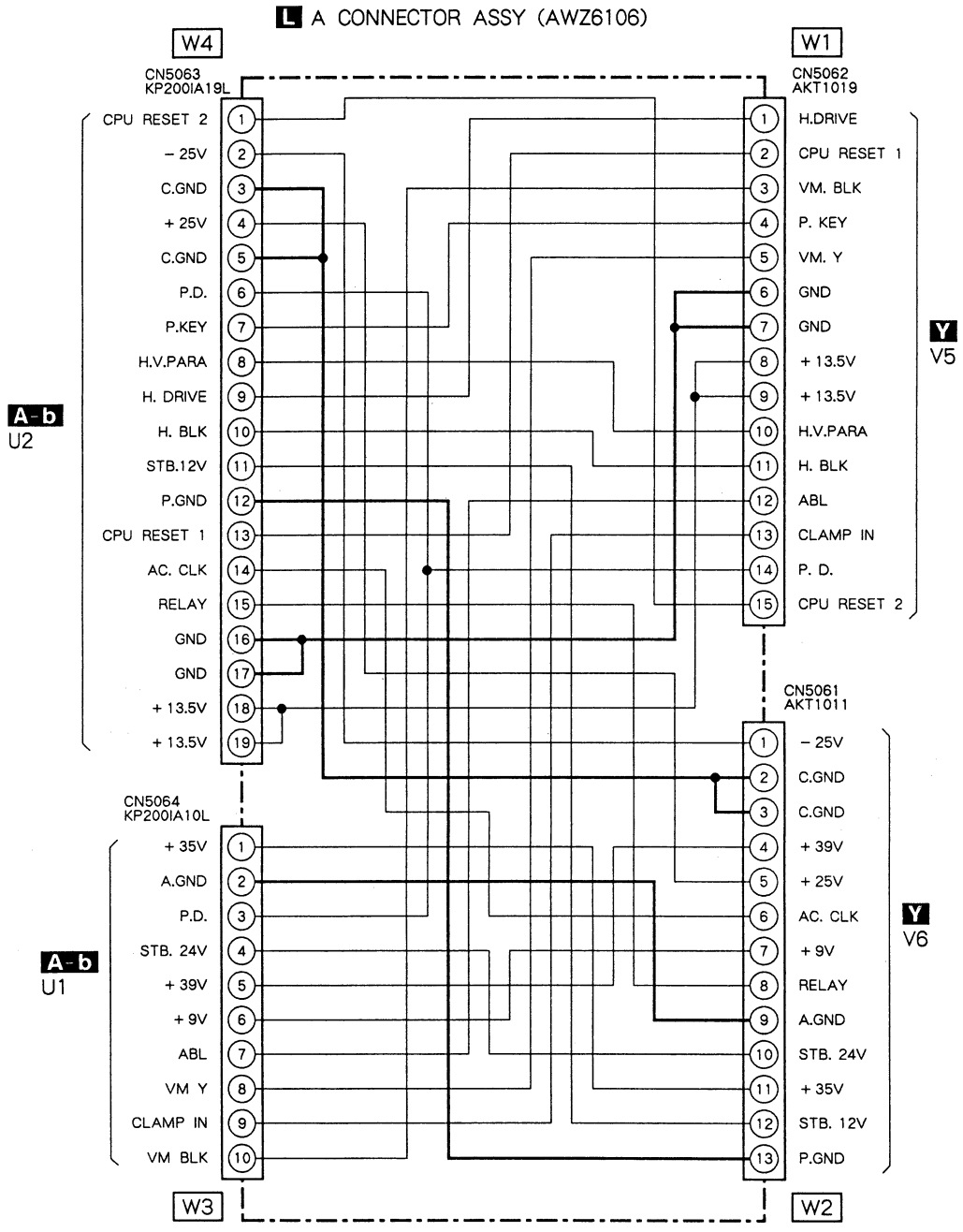
K ISC ASSY (2/2) (AWZ6104)

• ISC BLOCK

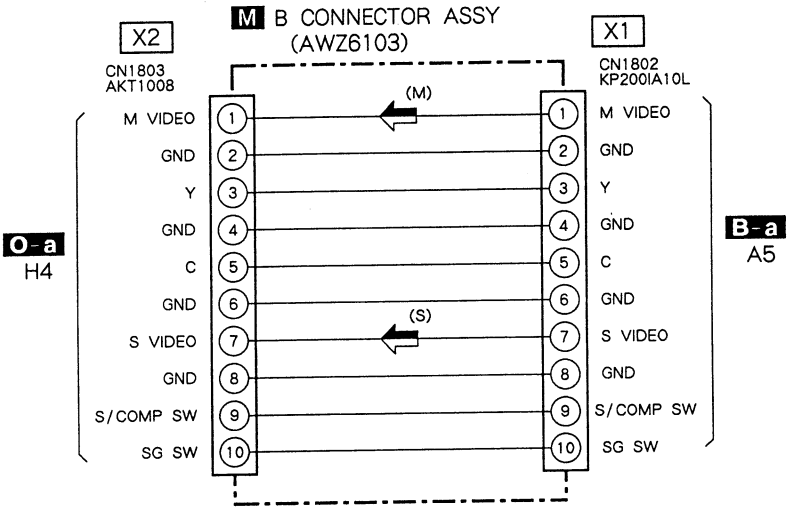


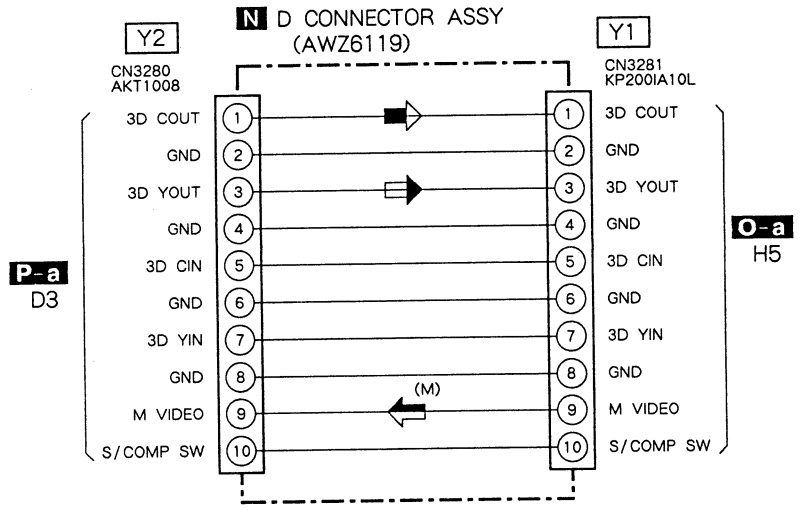

Q2211,Q2213 :
OVER CURRENT
PROTECTOR
Q2213
2SA1515-T
MAIN
REP.
out
SR out
CN2206
AKN1061
Q2208 : MAIN AND
PRE. BUFFER
Q2212 :
MINI REP. BUFFER
MINI
REP
out 1
MINI
REP
out 2
CN2204
AKN-209-
Q2209 :
SR OUT DRIVER
SR in
CN2202 AKN1028-
24V STB
GND
5V STB
RMC
SMT ACK
SMT ENB
SR O/X
BACKUP
1M O/X
SMT RST
DATA1
CLK1
CN2203
U19
A-d
T2
IC2204 :
STATIC
RAM
Q2207 :
RMC MUTE
Q2210,Q2214 :
RMC DRIVER
D(1:6)
: 2SA1162
: 2SC2712
: 1SS352

3.12 A CONNECTOR ASSY

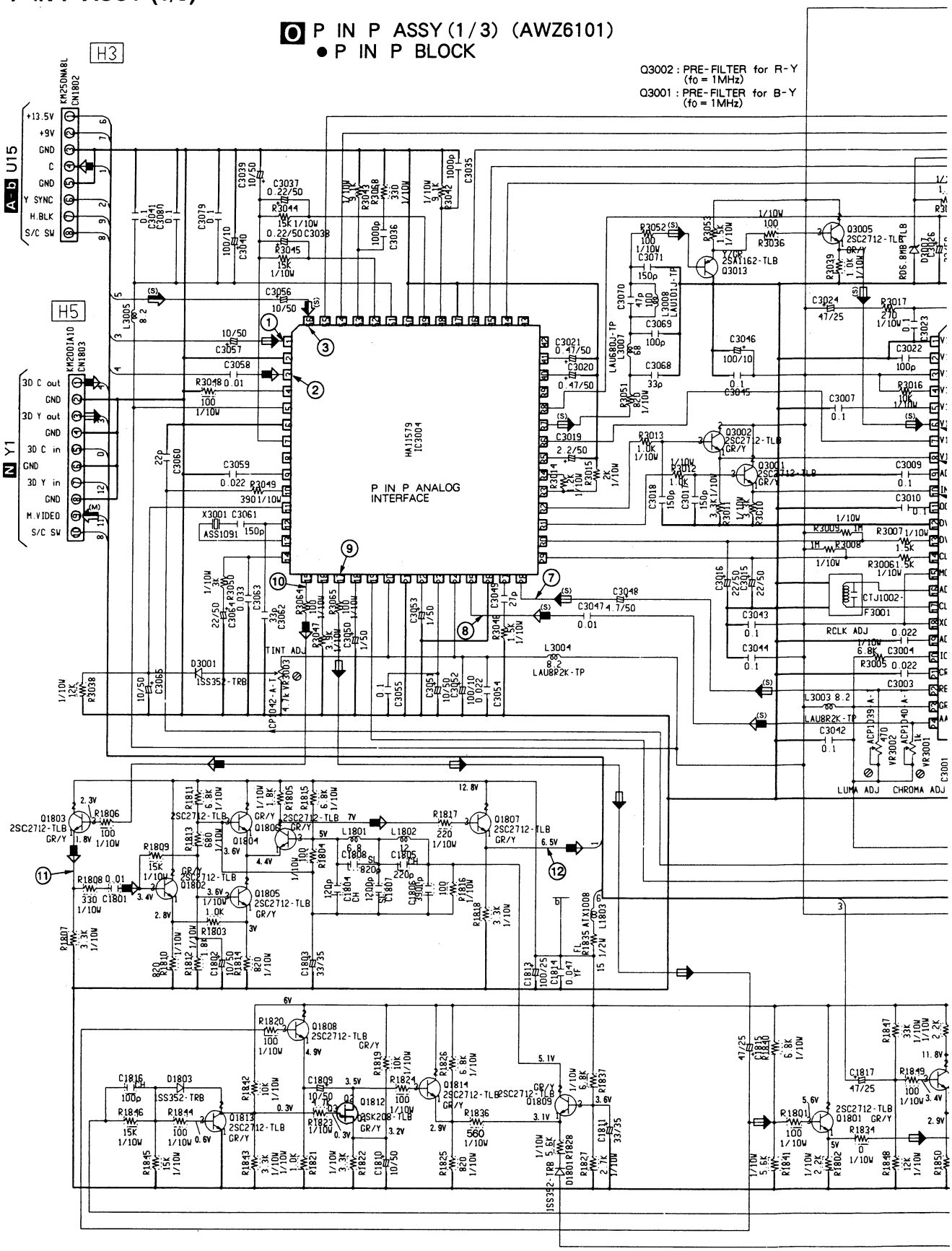


3.13 B AND D CONNECTOR ASSEMBLIES

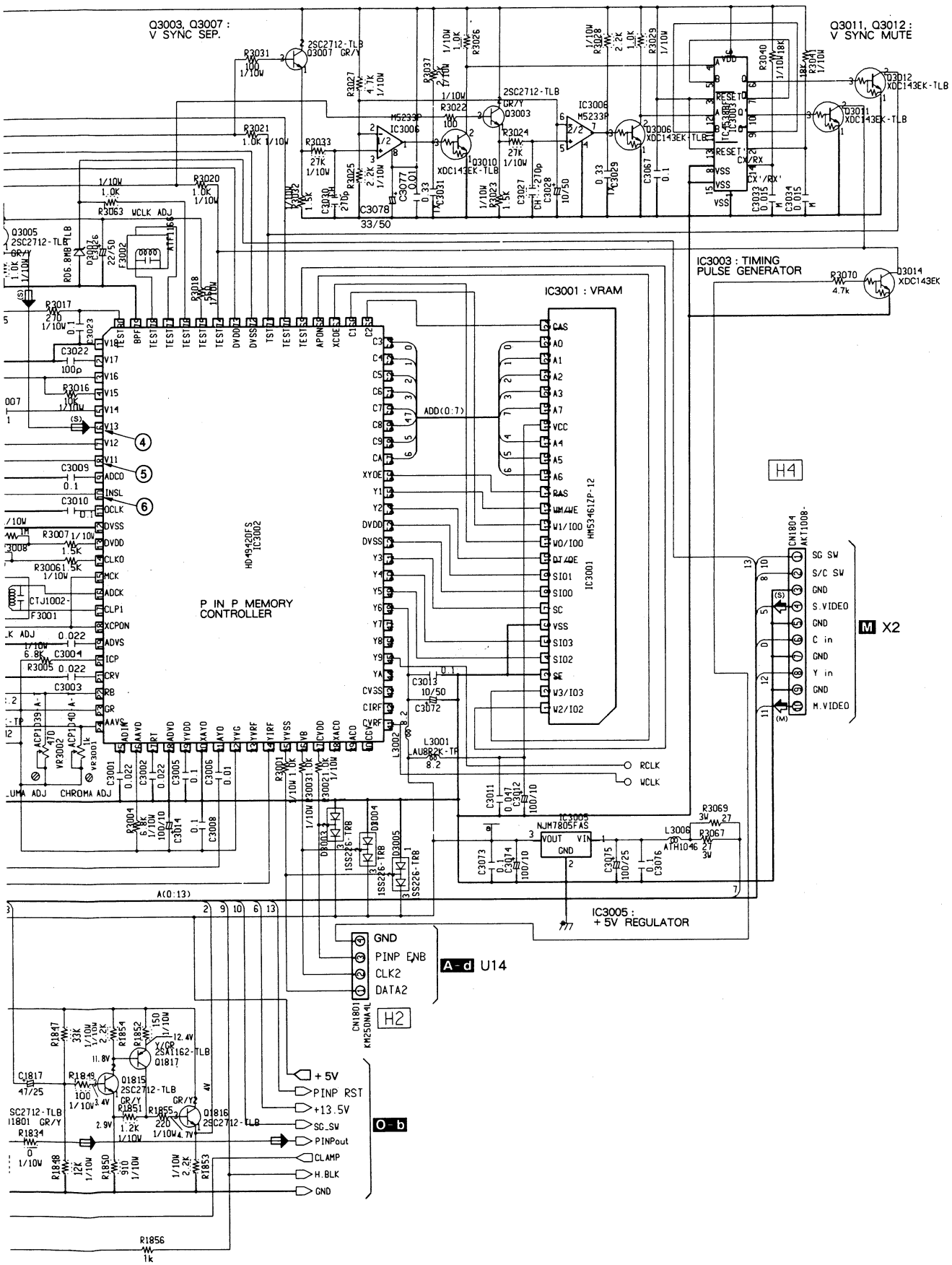




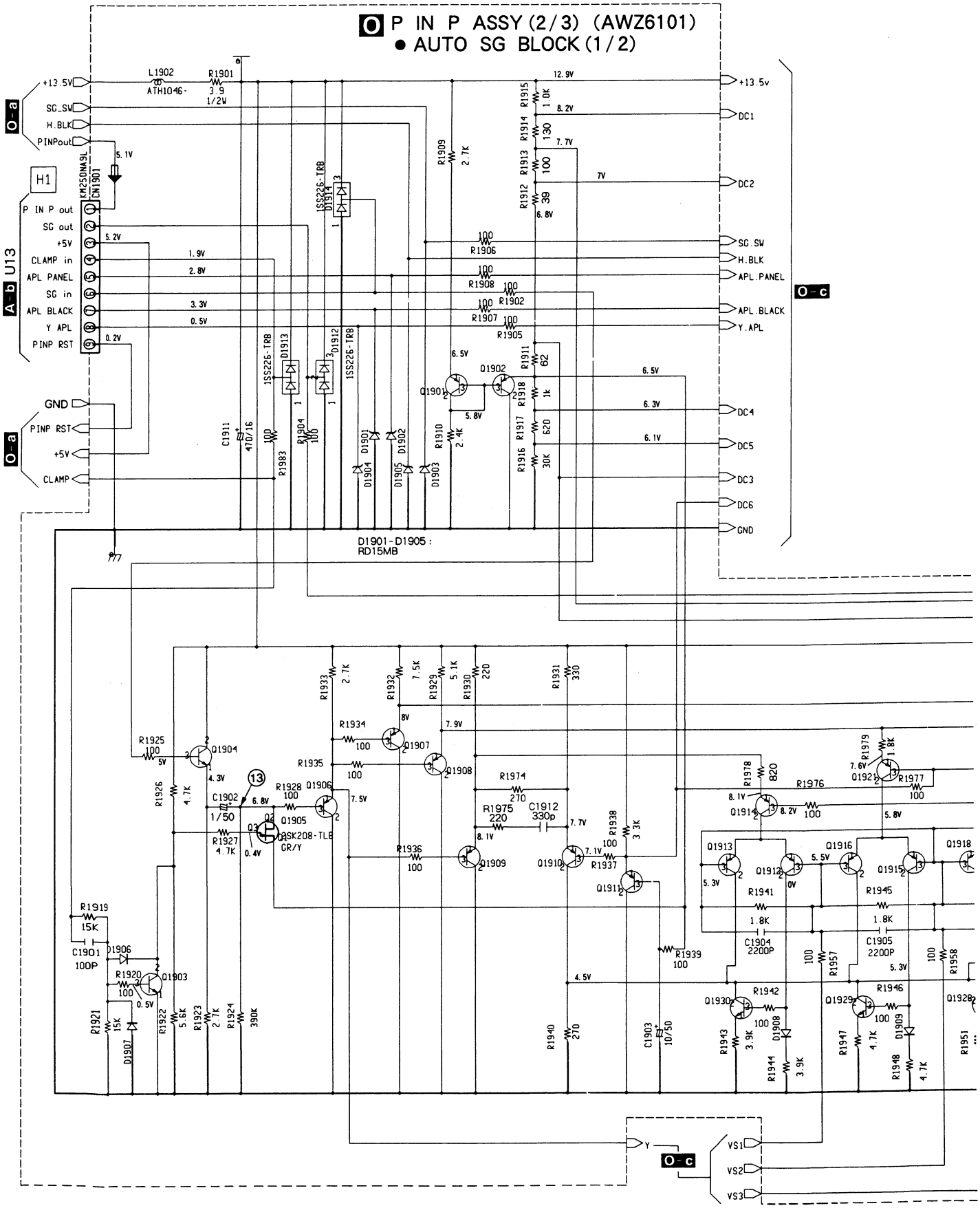
3.14 P IN P ASSY (1/3)



O-a

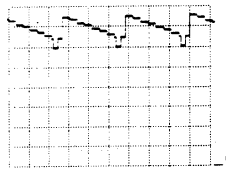

Q3003, Q3007 :
V SYNC SEP.
Q3011, Q3012 :
V SYNC MUTE
IC3003 : TIMING
PULSE GENERATOR
IC3001 : VRAM
P IN P MEMORY
CONTROLLER
HD49420FS
IC3002
HM534612P-12
IC3001
ADD(0:7)
A(0:13)
RCLK
WCLK
IC3005 :
+5V REGULATOR
M X2
A-d U14
O-b
H4
H2
SG SW
S/C SW
GND
S.VIDEO
GND
C in
GND
Y in
GND
M.VIDEO
+5V
PINP RST
+13.5V
SG_SW
PINPout
CLAMP
H.BLK
GND
PINP ENB
CLK2
DATA2
VCLK ADJ
LUMA ADJ
CHROMA ADJ

3.15 P IN P ASSY (2/3)

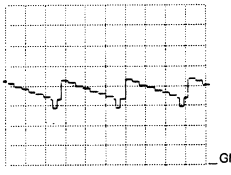


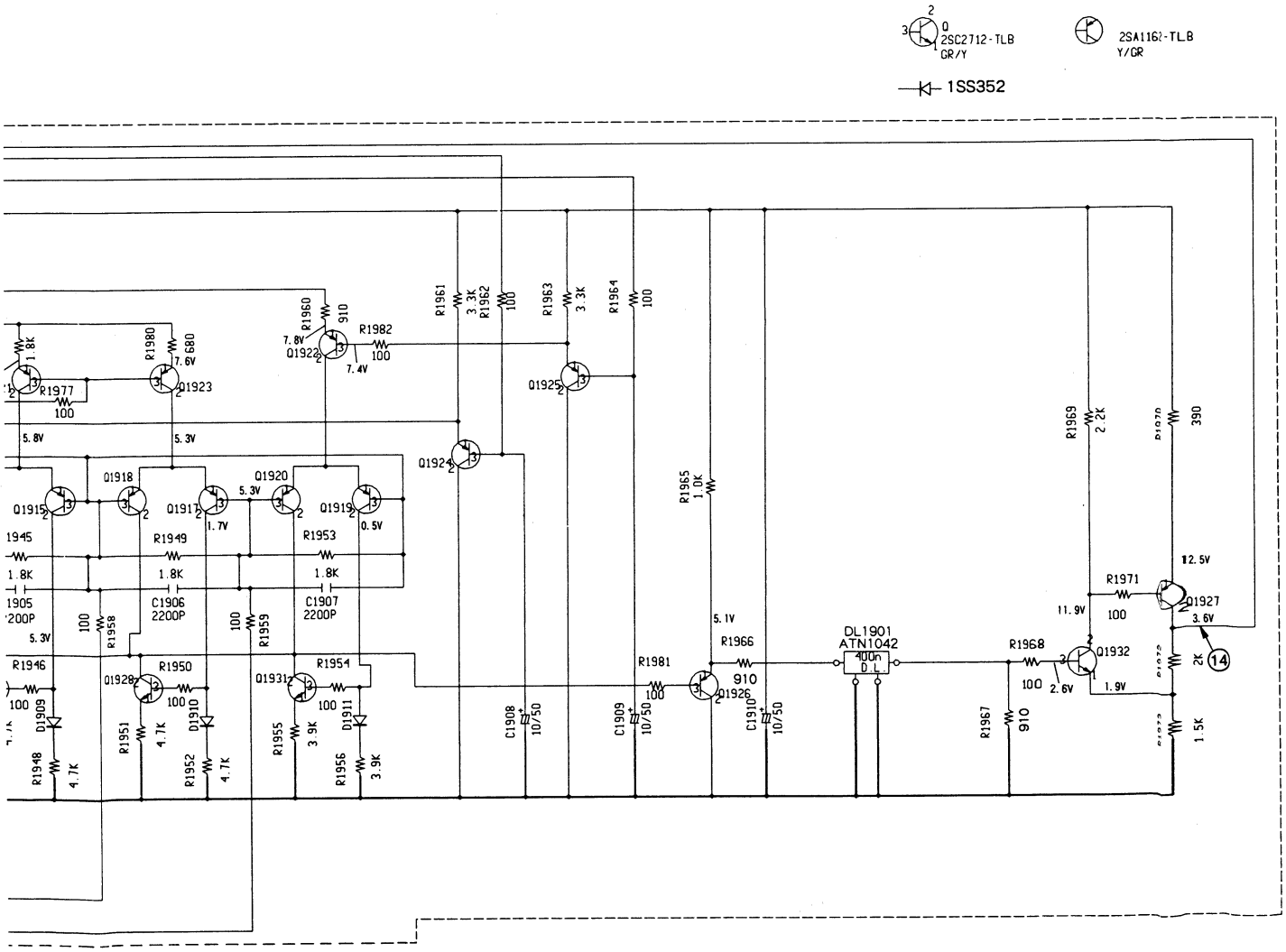
• Input signal : Clor bar
• DC range (unless otherwise noted)

(13) C1902 + side
V : 1V/div. , H : 20 μS/div.



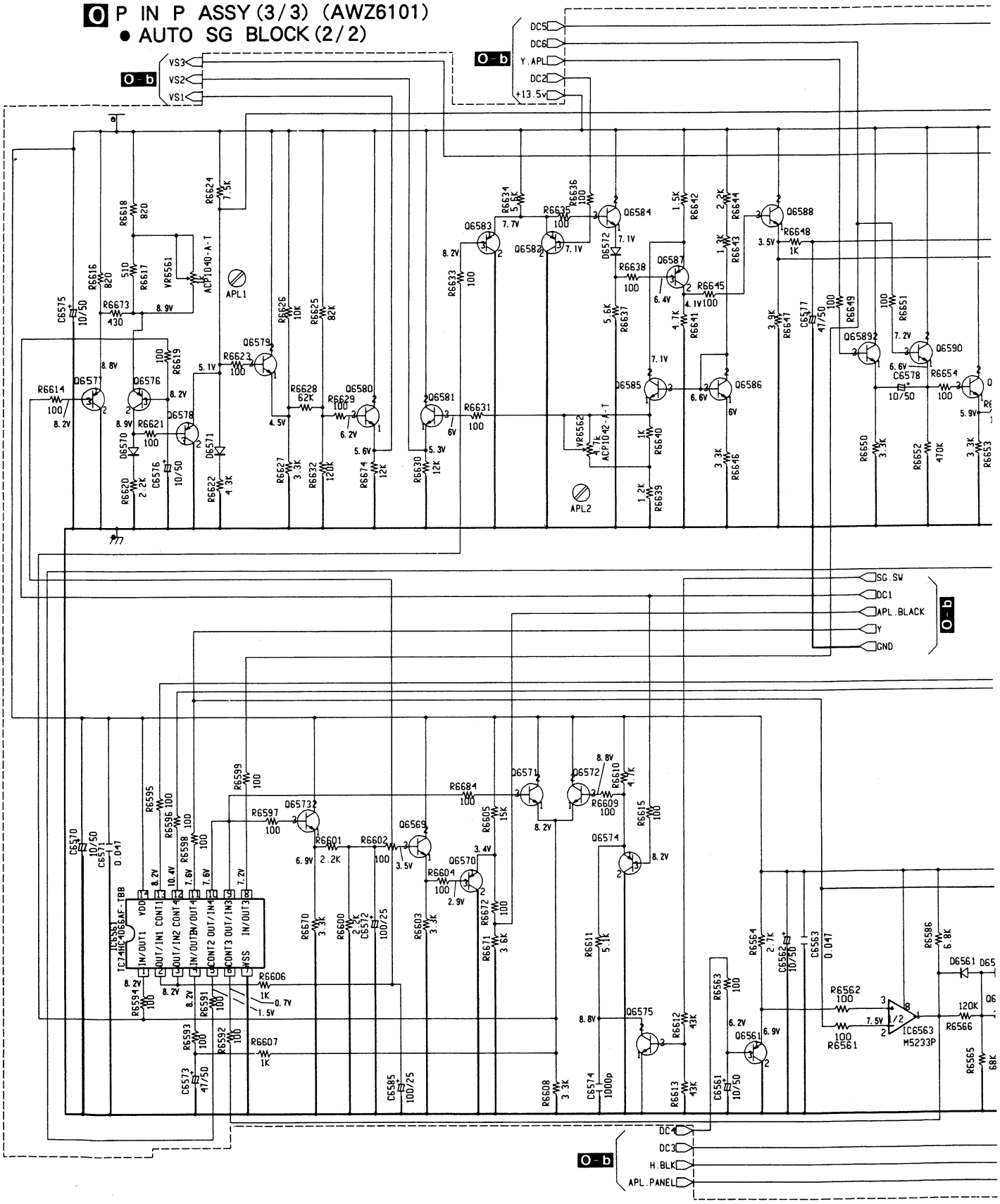
(14) Q1927 Collector
V : 1V/div. , H : 20 μS/div.

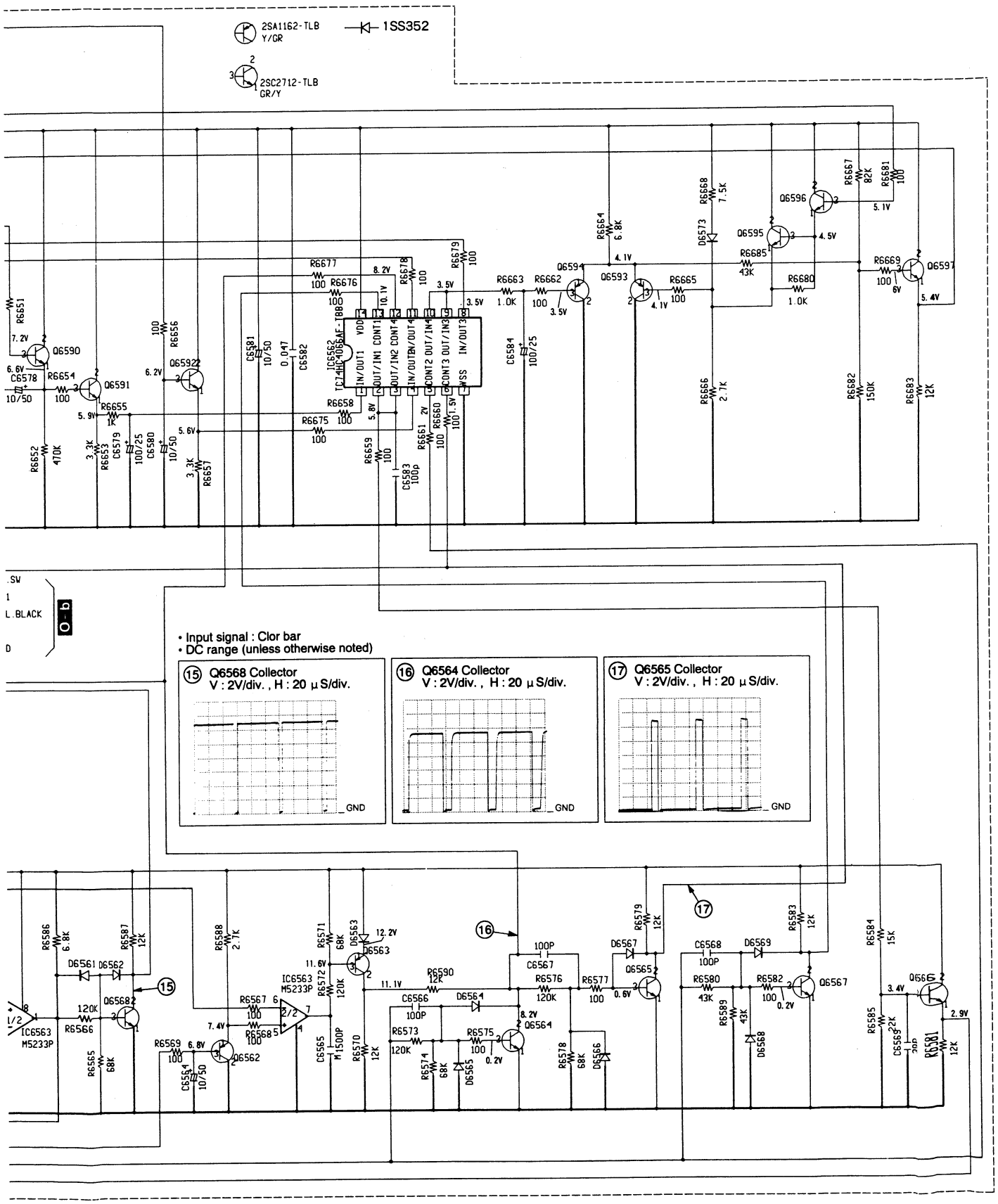




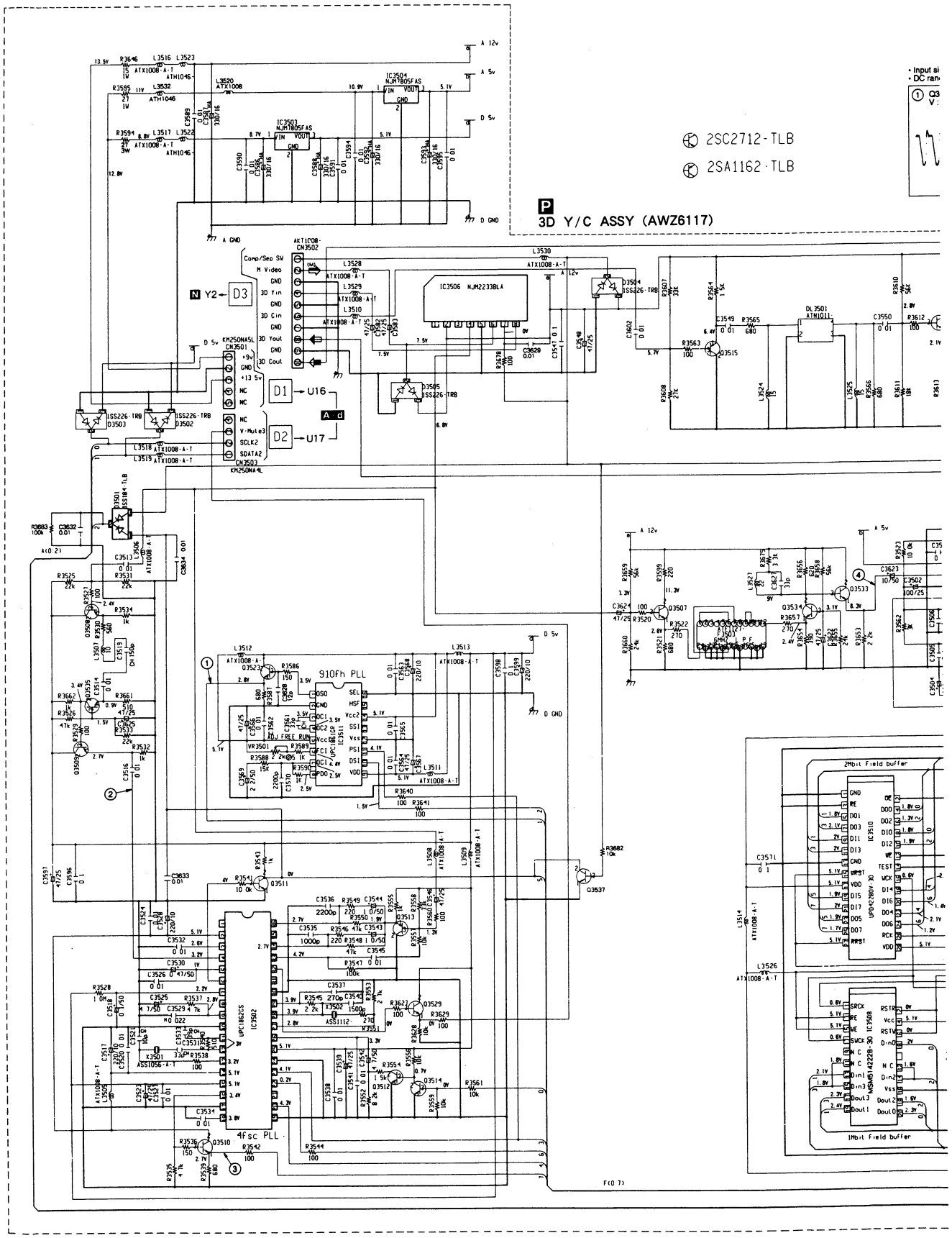
3.16 P IN P ASSY (3/3)

O P IN P ASSY (3/3) (AWZ6101)
● AUTO SG BLOCK (2/2)

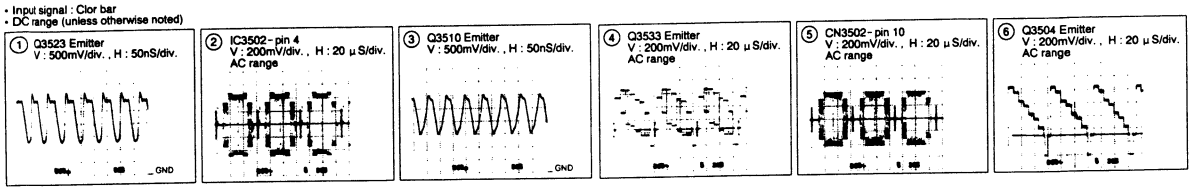


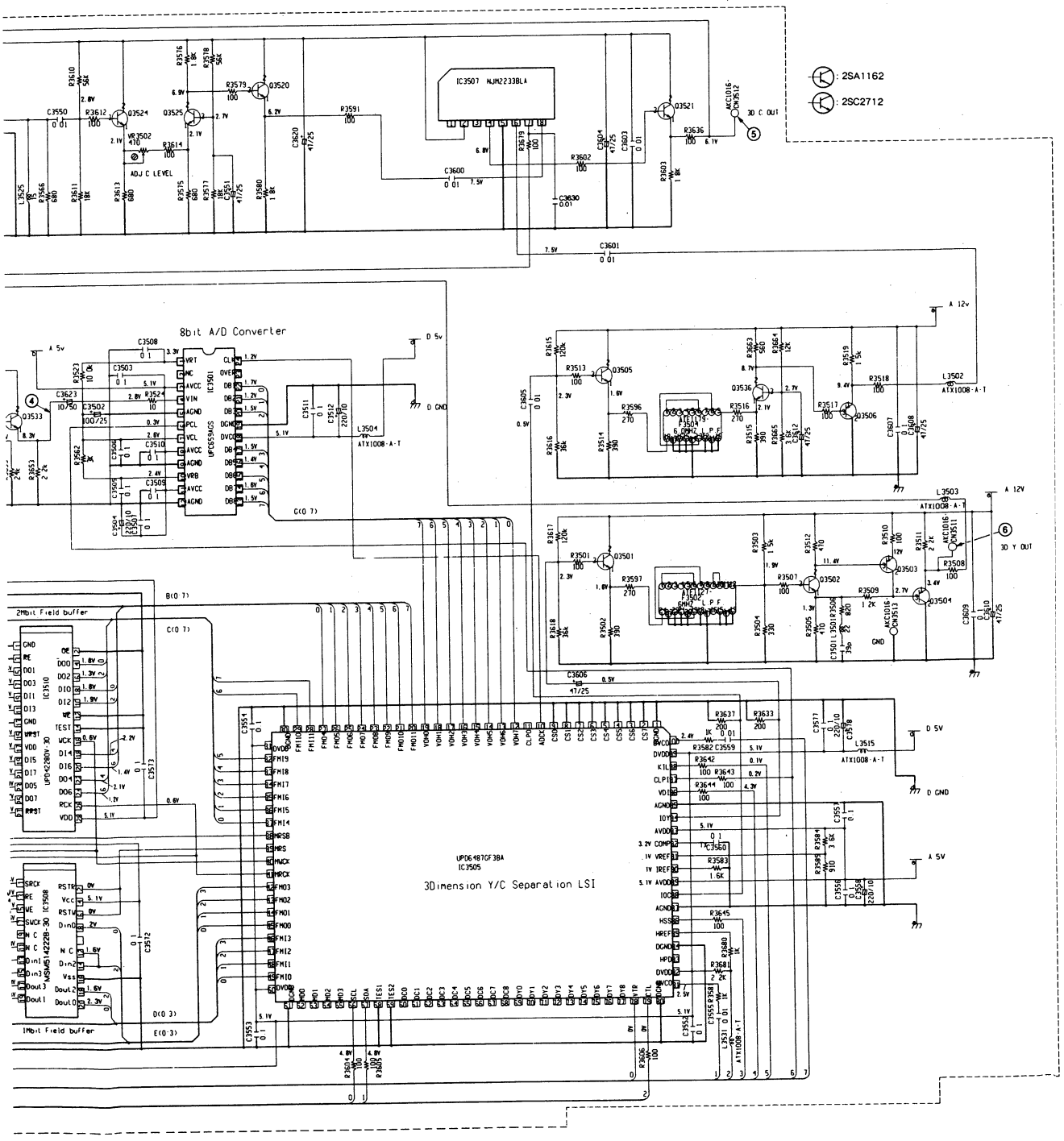

2SA1162-TLB Y/GR
1SS352
2SC2712-TLB GR/Y
IC6562 TC74HC4066AF-T8B
IC6563 M5233P
Q6590
Q6591
Q6592
Q6593
Q6594
Q6595
Q6596
Q6597
Q6561
Q6562
Q6563
Q6564
Q6565
Q6566
Q6567
Q6568
D6561
D6562
D6563
D6564
D6565
D6566
D6567
D6568
D6569
O-b
O-c
• Input signal : Clor bar
• DC range (unless otherwise noted)
15 Q6568 Collector
V : 2V/div. , H : 20 μS/div.
16 Q6564 Collector
V : 2V/div. , H : 20 μS/div.
17 Q6565 Collector
V : 2V/div. , H : 20 μS/div.
GND

3.17 3D Y/C ASSY (GUIDE PAGE)

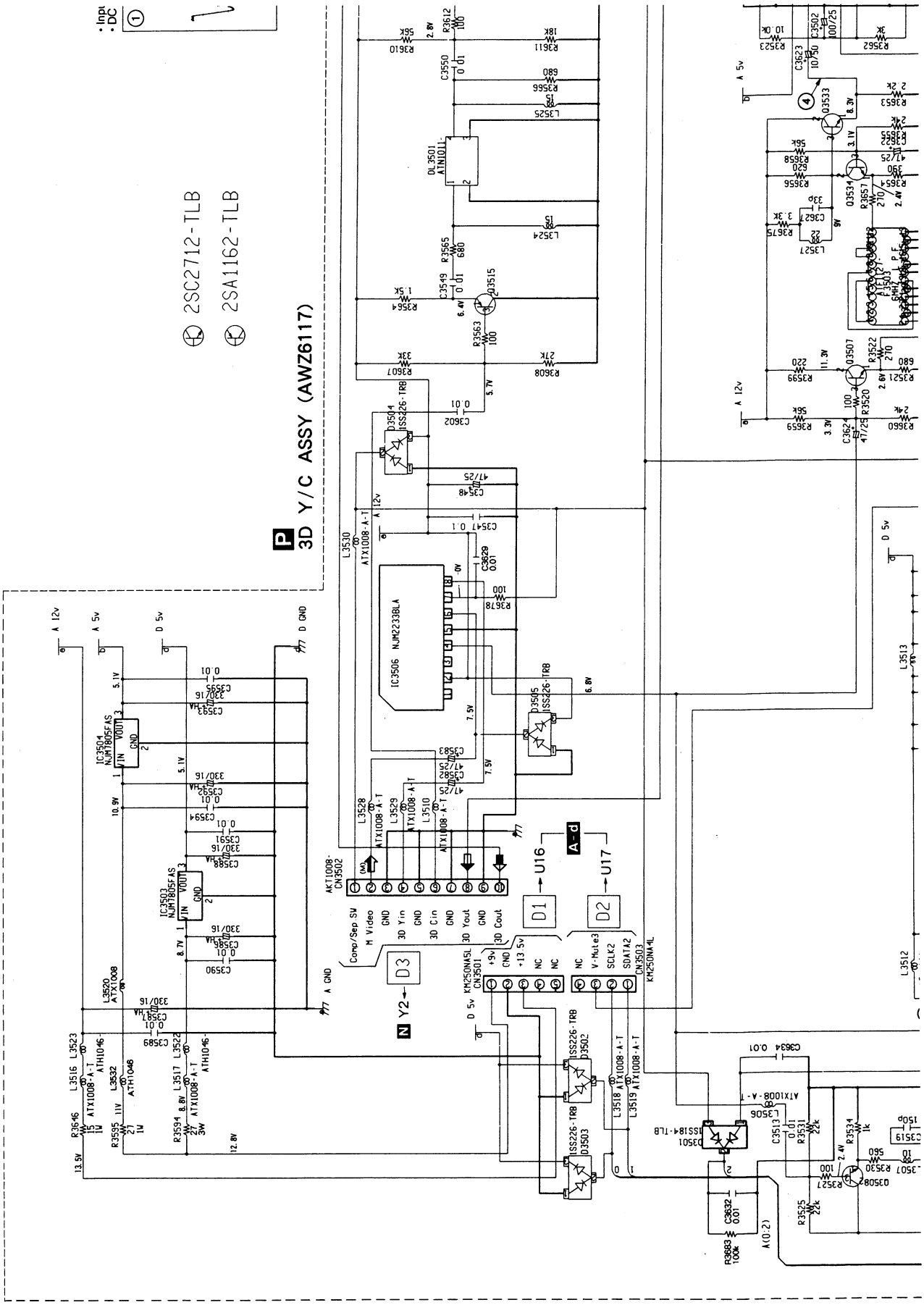


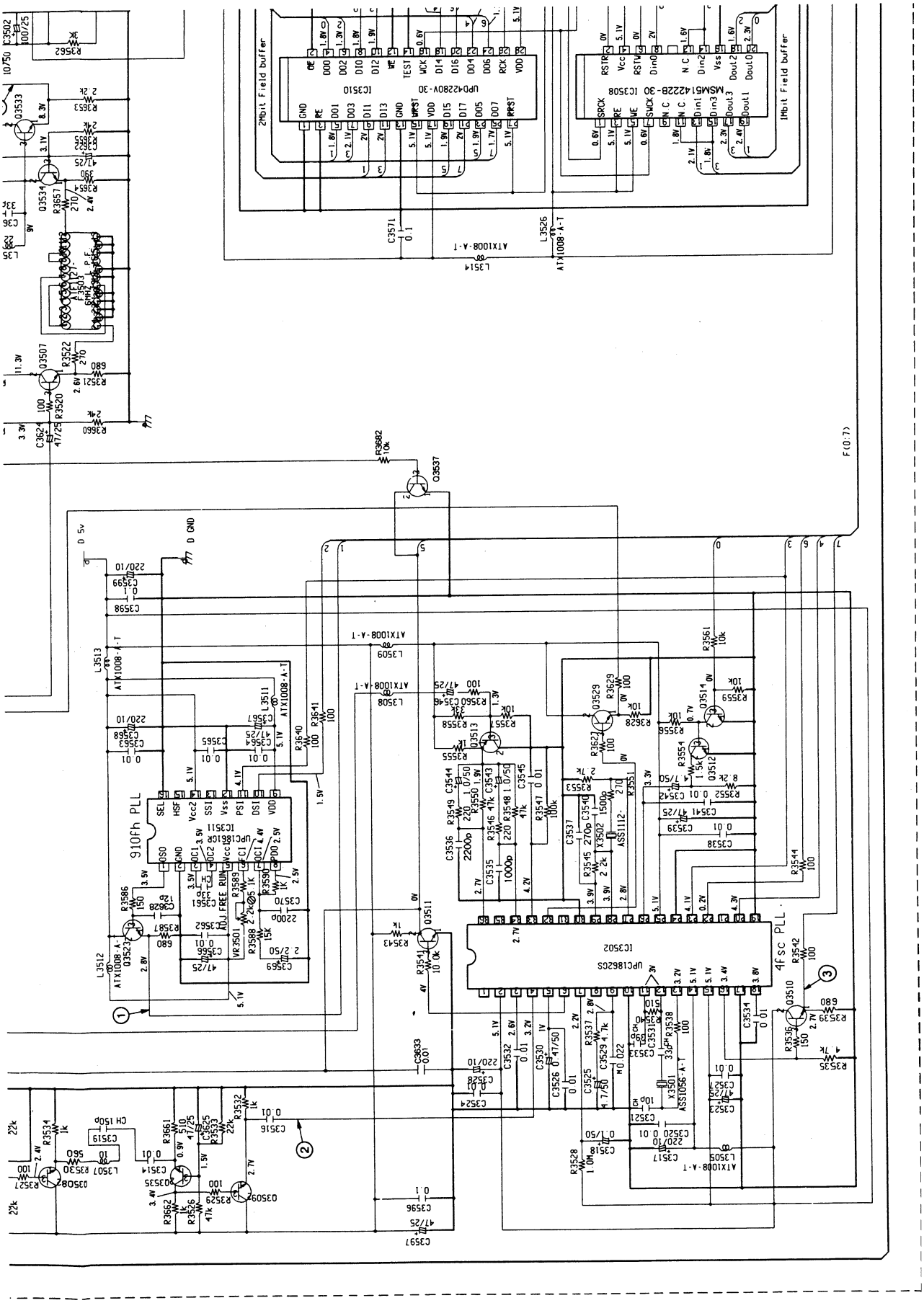
• Input signal : Clor bar
• DC range (unless otherwise noted)

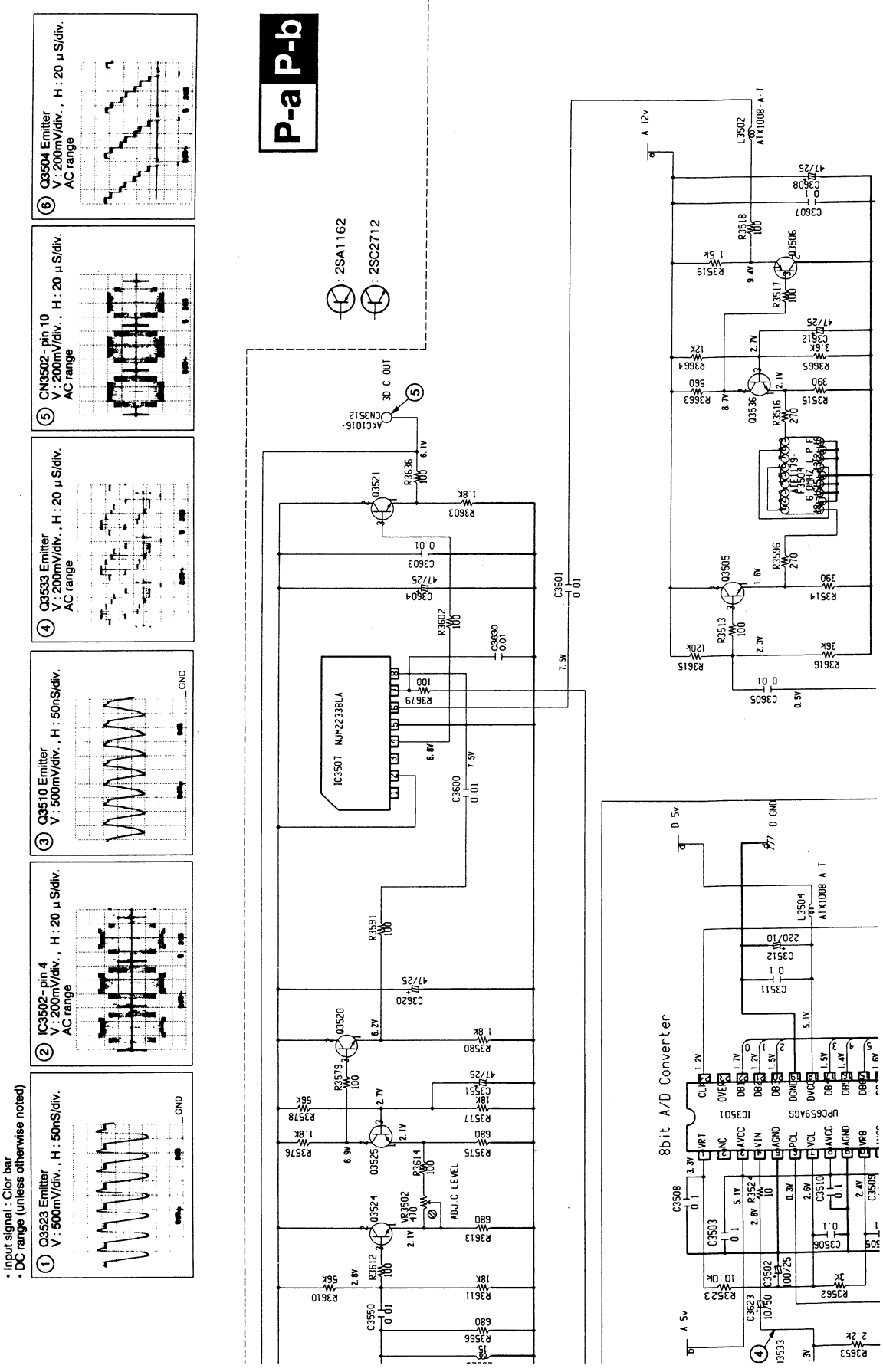




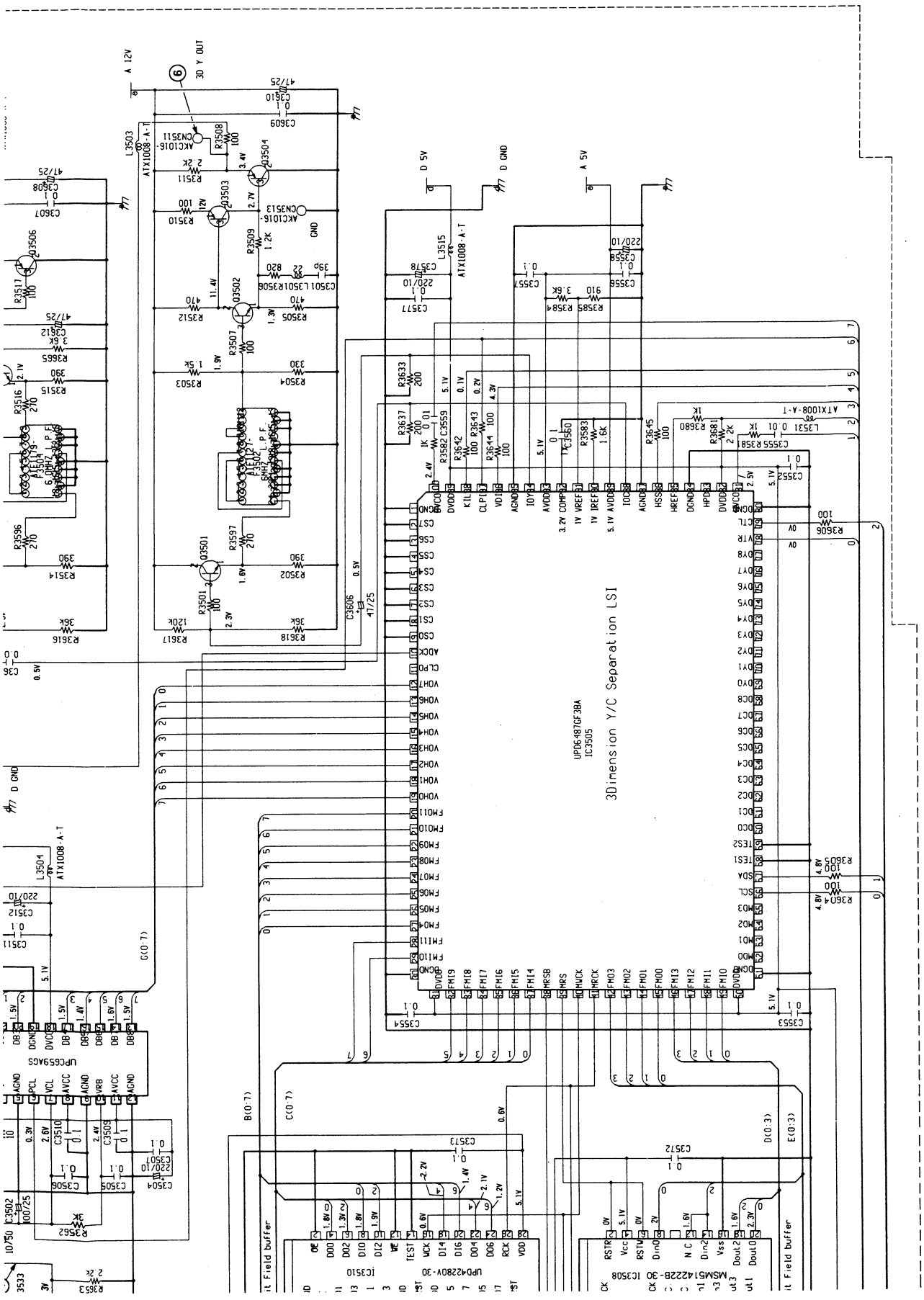
P-a P-b


P 3D Y/C ASSY (AWZ6117)
2SC2712-TLB
2SA1162-TLB
IC3506 NJM2233BLA
IC3504 NJM7805FAS
IC3503 NJM7805FAS
D3504 ISS226-TRB
D3505 ISS226-TRB
D3502 ISS226-TRB
D3503 ISS226-TRB
D3501 ISS184-TLB
Q3533
Q3534
Q3507
Q3508
A 12v
A 5v
D 5v
A GND
D GND
D1 → U16
D2 → U17
D3
N Y2
A-d
Comp/Sep SW
M Video
3D Yin
3D Cin
3D Yout
3D Cout
V-Mute3
SCLK2
SDATA2
+9v
+13.5v
NC
GND


2Mbit Field buffer
IC3510
UPD42280V-30
1Mbit Field buffer
MSM5142228-30 IC3508
F(0:7)
D 5v
D GND
910fh PLL
IC3511
UPC1886GR
4fsc PLL
IC3502
UPC1862GS
ATX1008-A-T

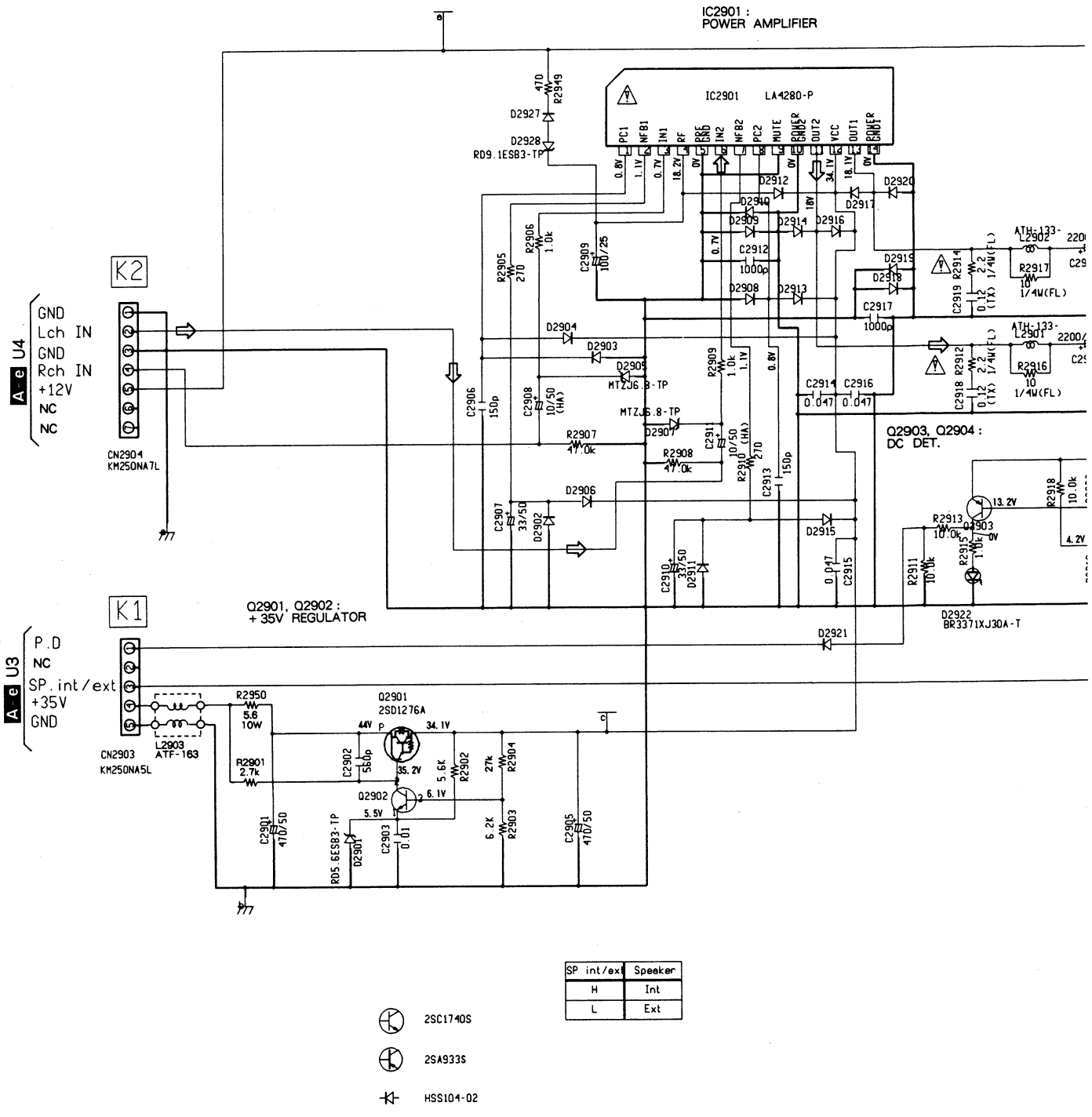

P-a P-b
• Input signal : Clor bar
• DC range (unless otherwise noted)
① Q3523 Emitter V : 500mV/div. , H : 50nS/div.
② IC3502- pin 4 V : 200mV/div. , H : 20 µS/div. AC range
③ Q3510 Emitter V : 500mV/div. , H : 50nS/div.
④ Q3533 Emitter V : 200mV/div. , H : 20 µS/div. AC range
⑤ CN3502- pin 10 V : 200mV/div. , H : 20 µS/div. AC range
⑥ Q3504 Emitter V : 200mV/div. , H : 20 µS/div. AC range
: 2SA1162
: 2SC2712
IC3507 NJM2238BLA
8bit A/D Converter
IC3501 UPC659ACS

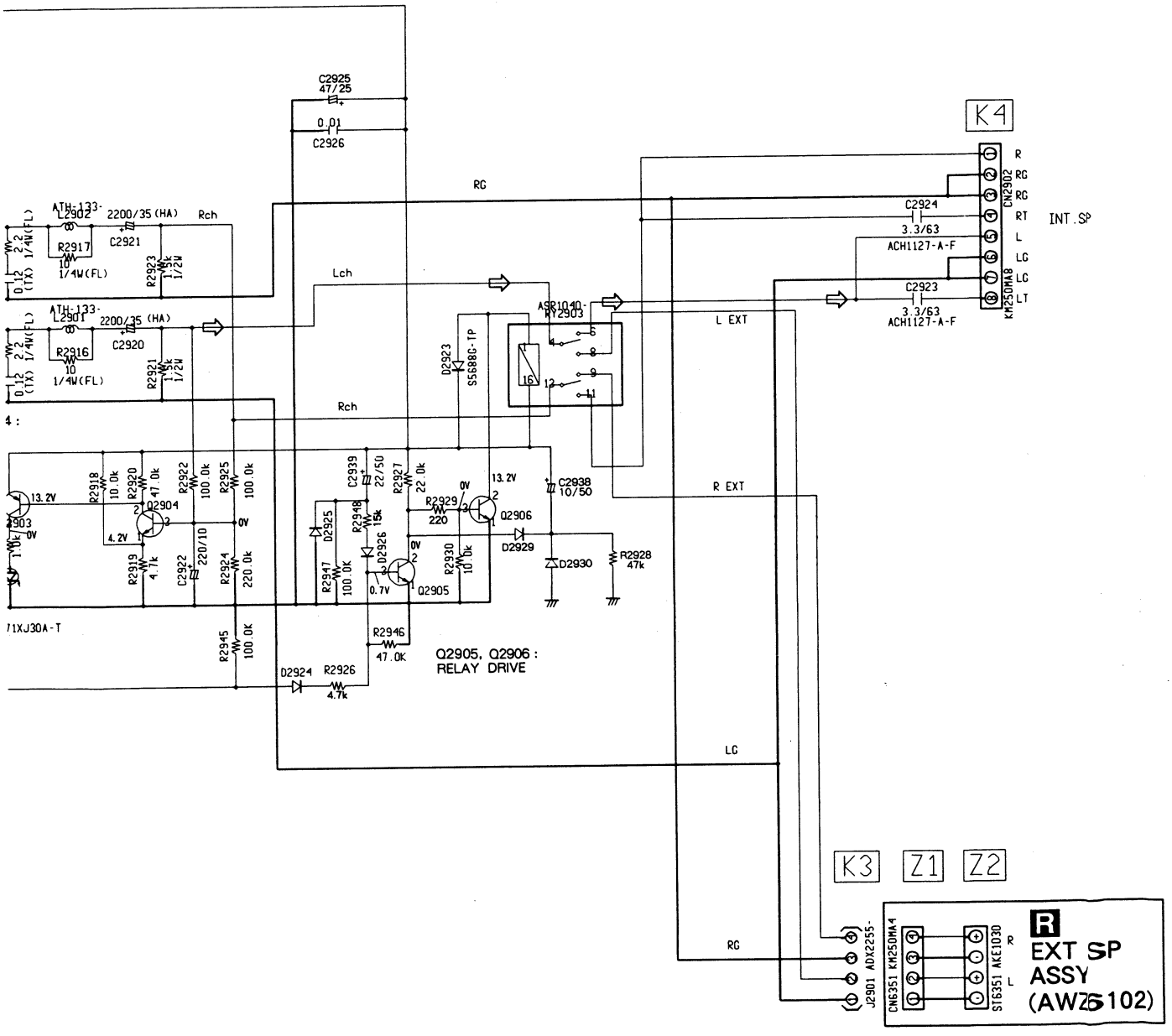
P-a P-b


3Dimension Y/C Separation LSI
UPD64870F3BA
IC3505
UPC659AGS
UPD42280V-30 IC3510
MSM5142228-30 IC3508
3D Y OUT
A 12V
D 5V
D GND
A 5V

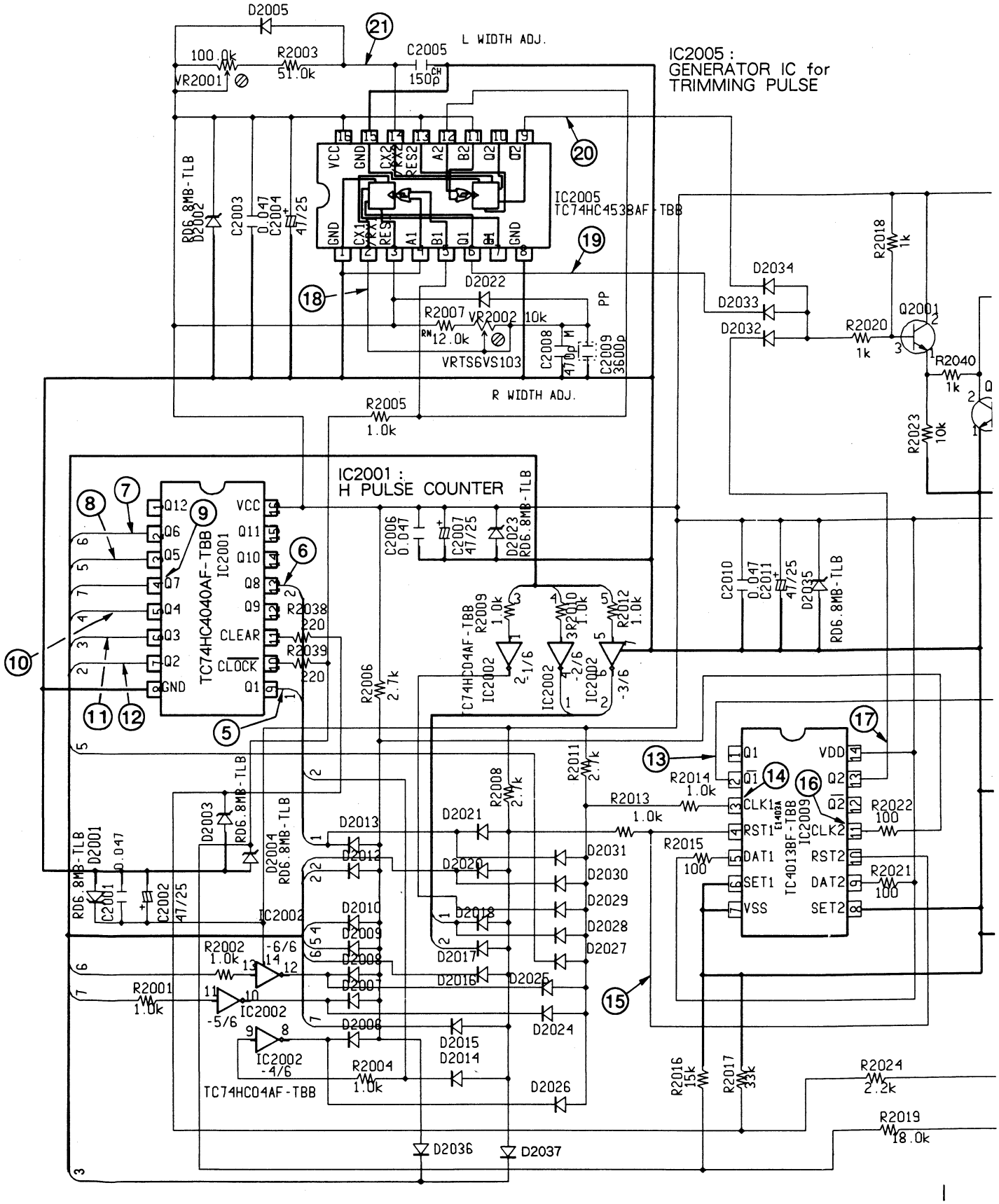
3.18 AUDIO AND EXT SP ASSEMBLIES

Q
AUDIO ASSY (AWZ6109)



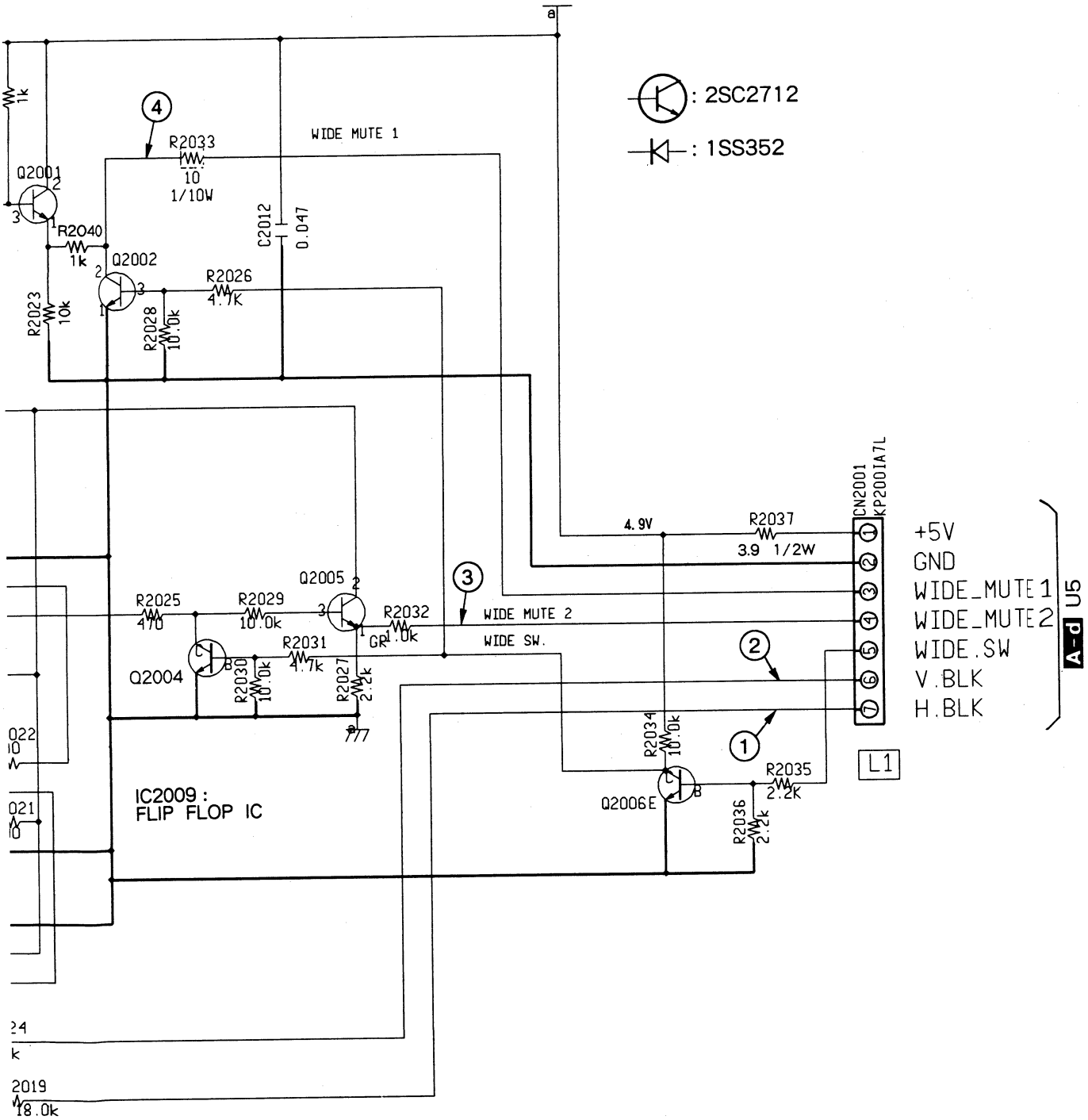

K4
K3
Z1
Z2
INT.SP
EXT SP ASSY (AWZ5102)
Q2905, Q2906 : RELAY DRIVE
RG
Lch
Rch
L EXT
R EXT
LG
C2925 47/25
C2926 0.01
C2924 3.3/63 ACH1127-A-F
C2923 3.3/63 ACH1127-A-F
L2902 2200/35 (HA)
L2901 2200/35 (HA)
C2921
C2920
R2917 10 1/4W(FL)
R2916 10 1/4W(FL)
R2923 1.8k 1/2W
R2921 1.8k 1/2W
ASR1040-RY2903
D2923 S5688G-TP
Q2903
Q2904
Q2905
Q2906
D2924
D2925
D2926
D2929
D2930
R2946 47.0K
R2928 47k
R2926 4.7k
CN2902 KM250MA8
CN6351 KM250MA4
ST6351 AKE1030
J2901 ADX2255-

3.19 FULL CINEMA MUTE ASSY

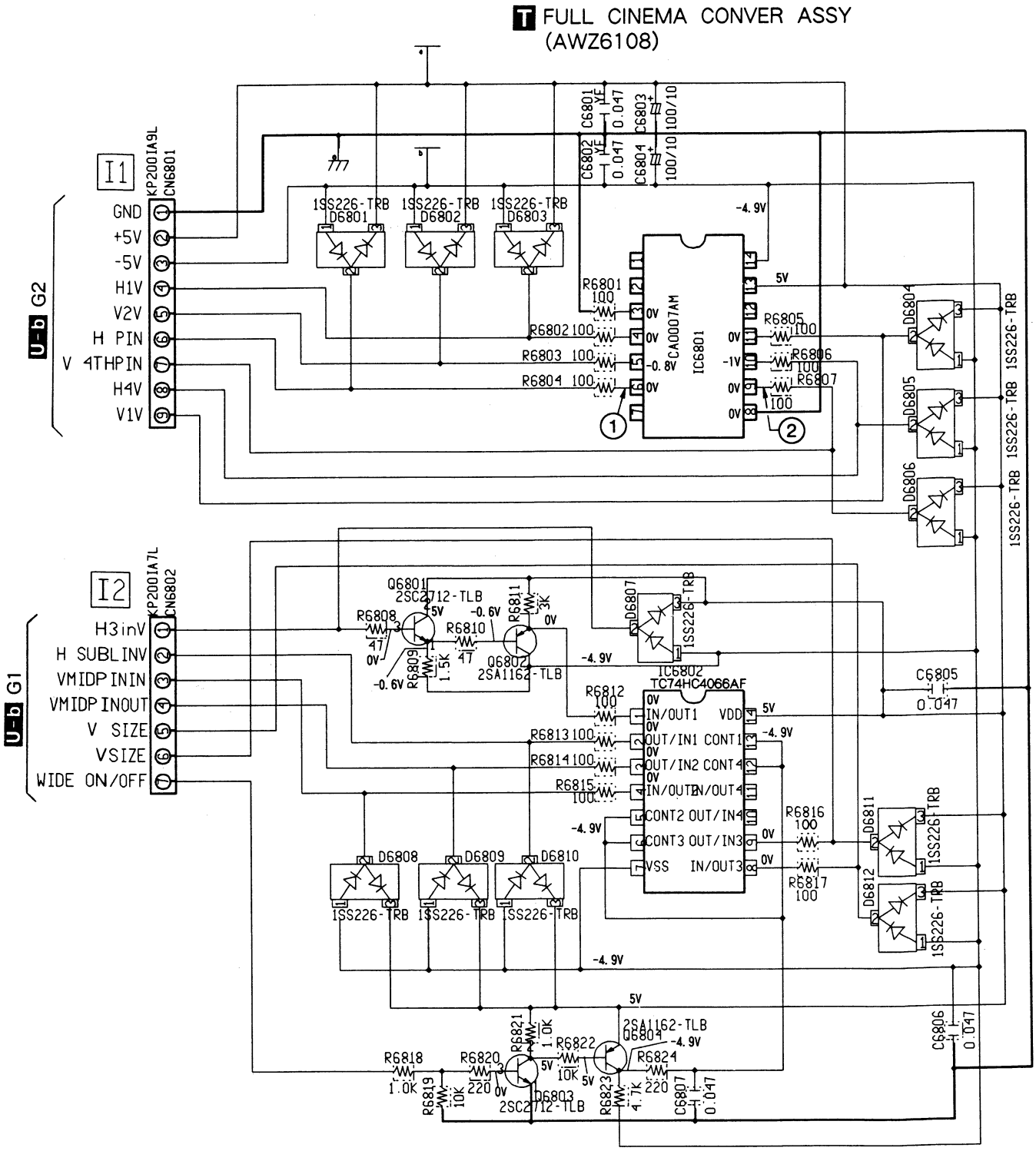


S

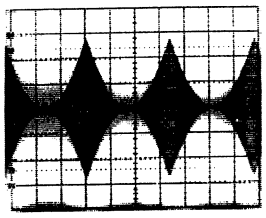
FULL CINEMA MUTE ASSY
(AWZ6107)



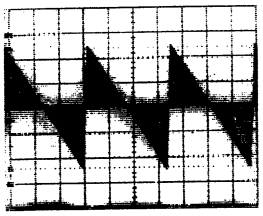
3.20 FULL CINEMA CONVER ASSY



① **IC6801 - pin 6**
V : 0.5V/div. H : 5msec/div.

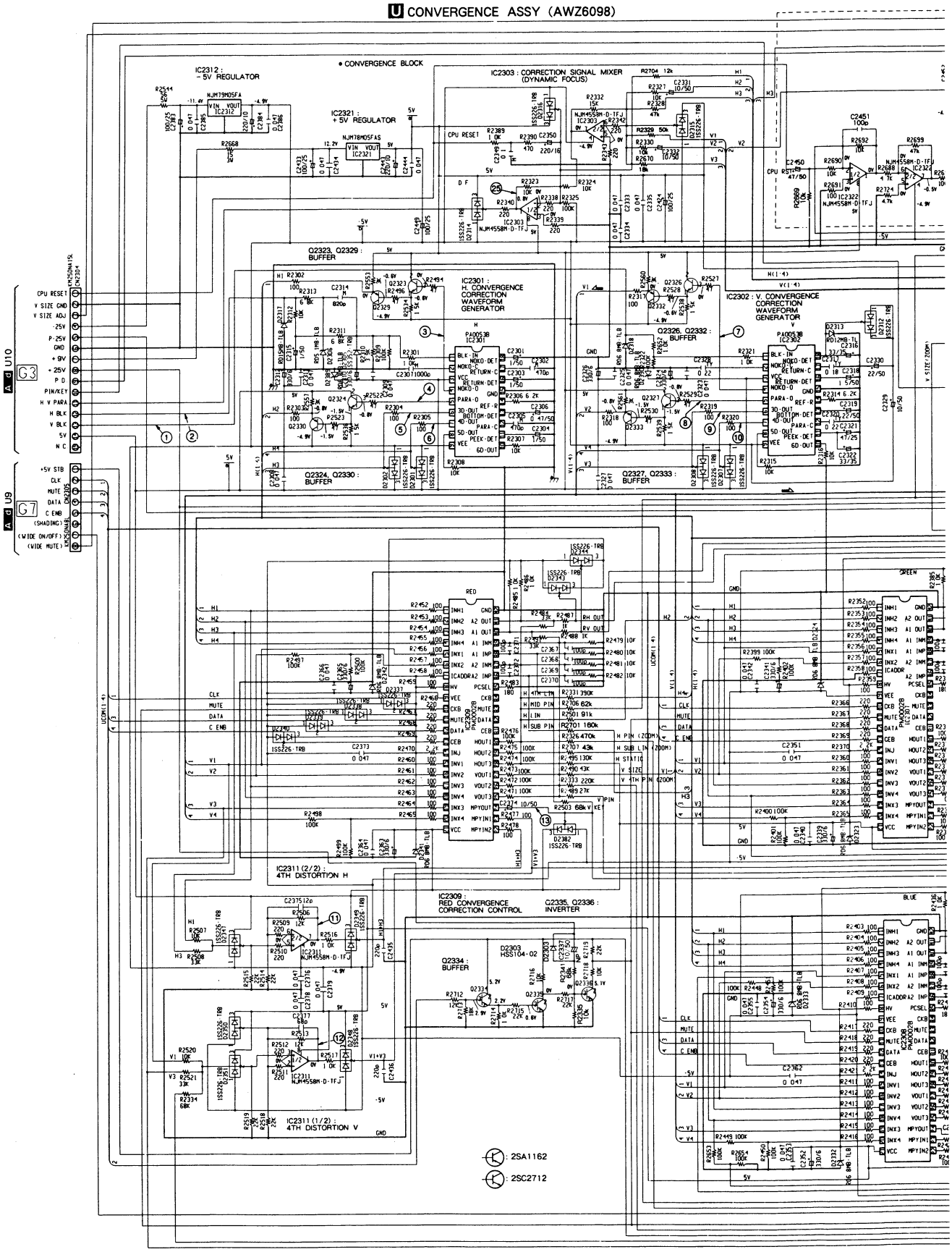


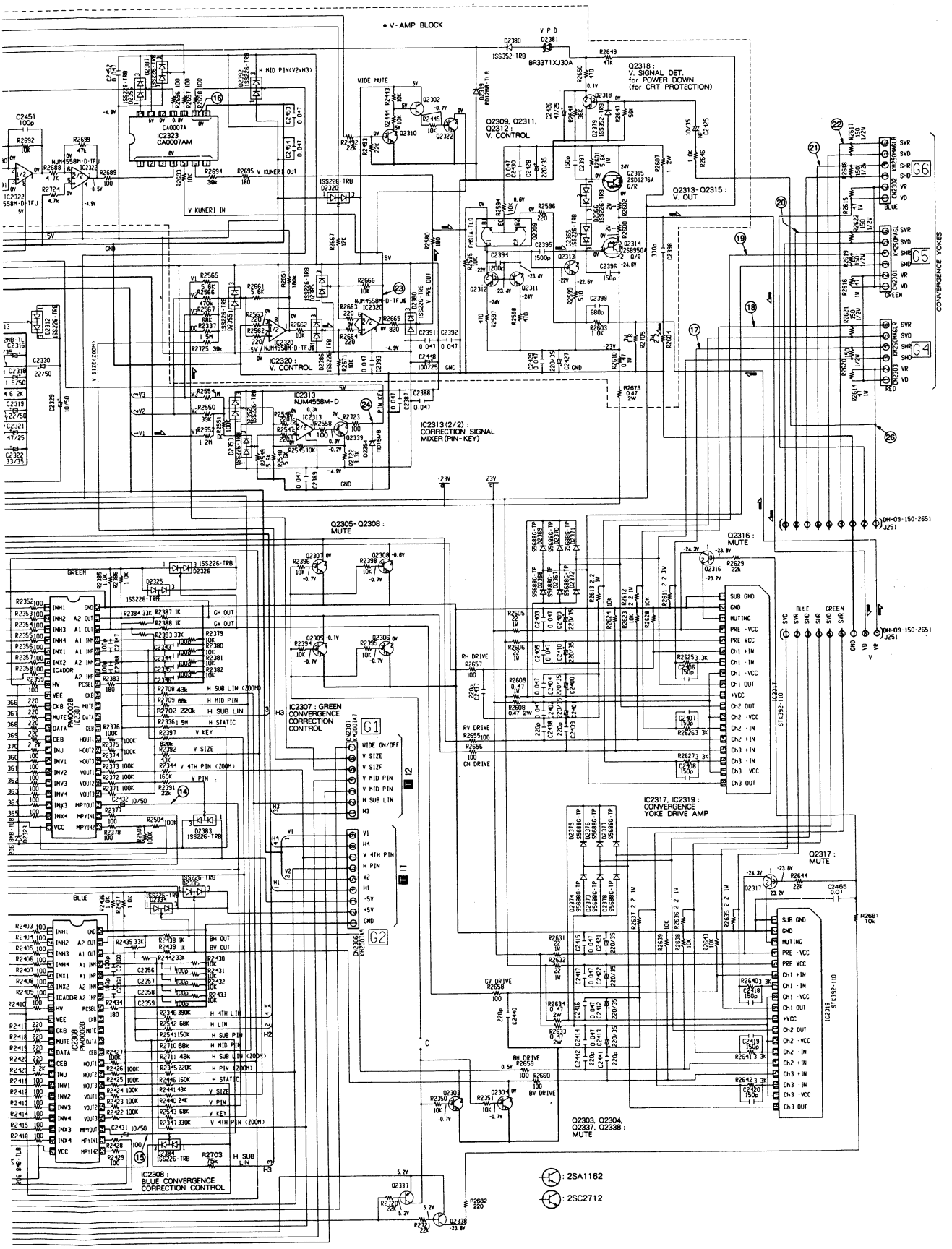
② **IC6801 - pin 9**
V : 0.5V/div. H : 5msec/div.



3.21 CONVERGENCE ASSY (GUIDE PAGE)

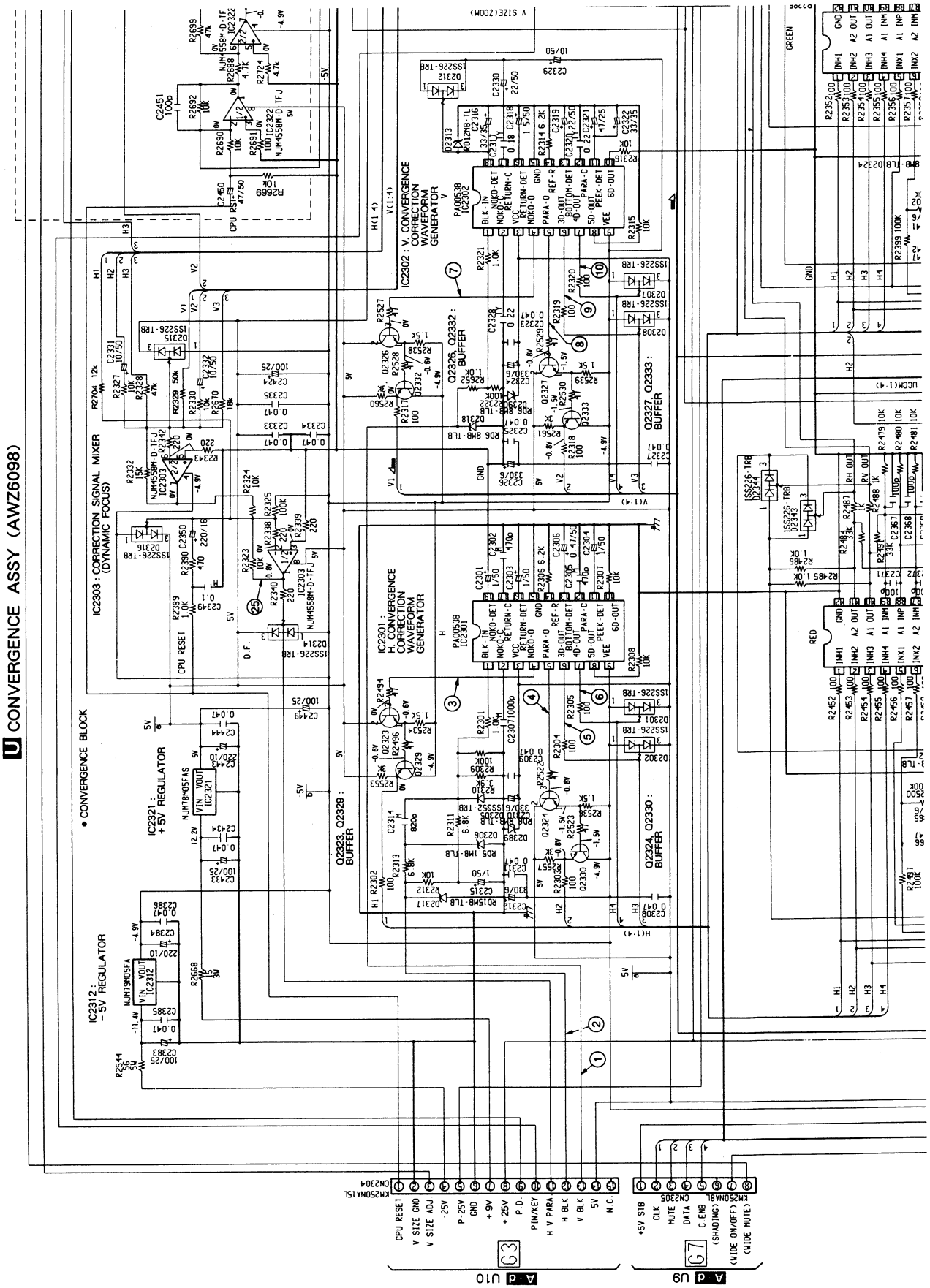
U CONVERGENCE ASSY (AWZ6098)



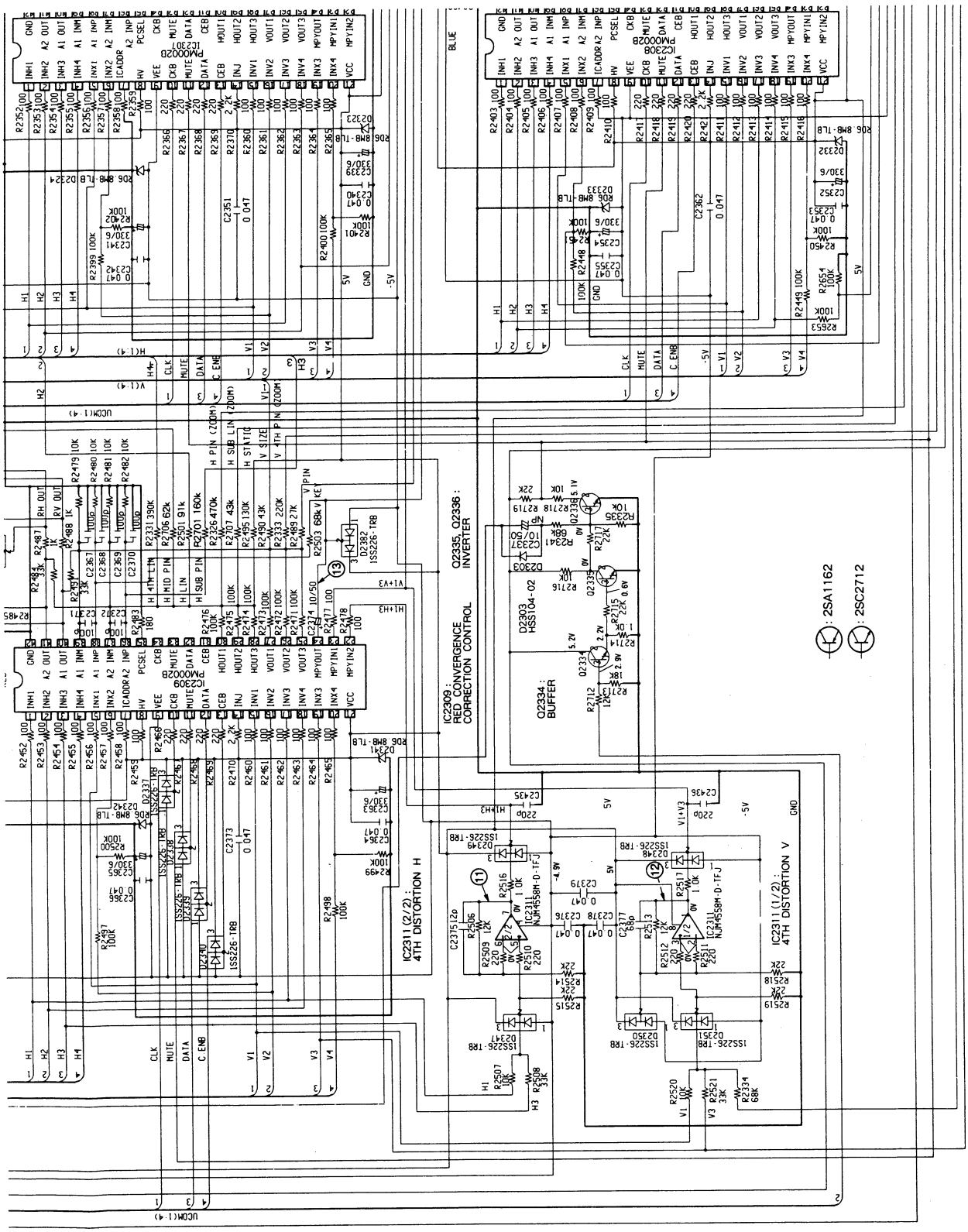

• V-AMP BLOCK
IC2320 : V. CONTROL
IC2313 NJM4558M-D
IC2313(2/2) : CORRECTION SIGNAL MIXER (PIN-KEY)
Q2309, Q2311, Q2312 : V. CONTROL
Q2318 : V. SIGNAL DET. for POWER DOWN (for CRT PROTECTION)
Q2313-Q2315 : V. OUT
Q2305-Q2308 : MUTE
Q2316 : MUTE
Q2317 : MUTE
Q2303, Q2304, Q2337, Q2338 : MUTE
IC2307 : GREEN CONVERGENCE CORRECTION CONTROL
IC2308 : BLUE CONVERGENCE CORRECTION CONTROL
IC2317, IC2319 : CONVERGENCE YOKE DRIVE AMP
CONVERGENCE YOKES
: 2SA1162
: 2SC2712

U-a U-b

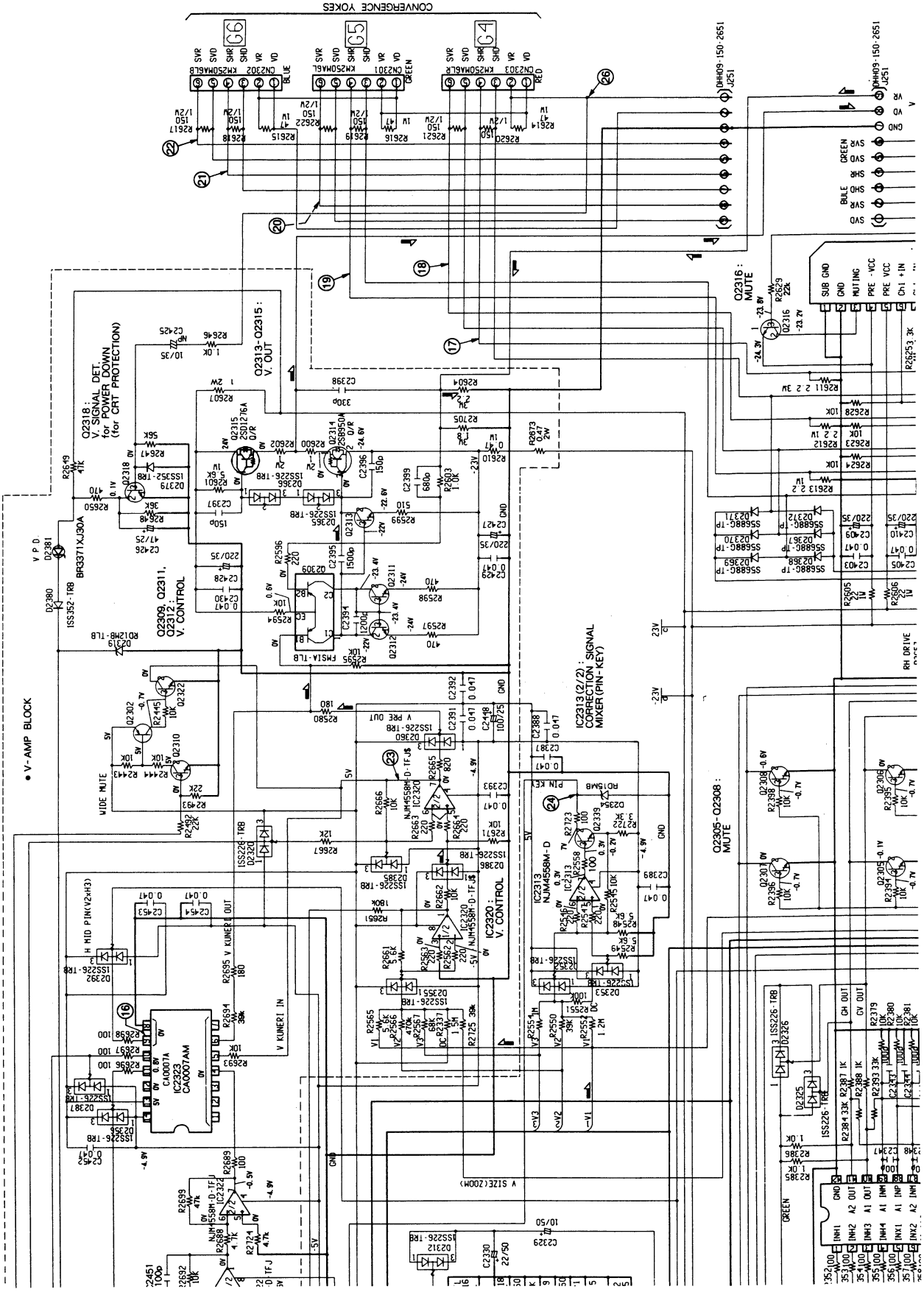
U CONVERGENCE ASSY (AWZ6098)



U-a U-b

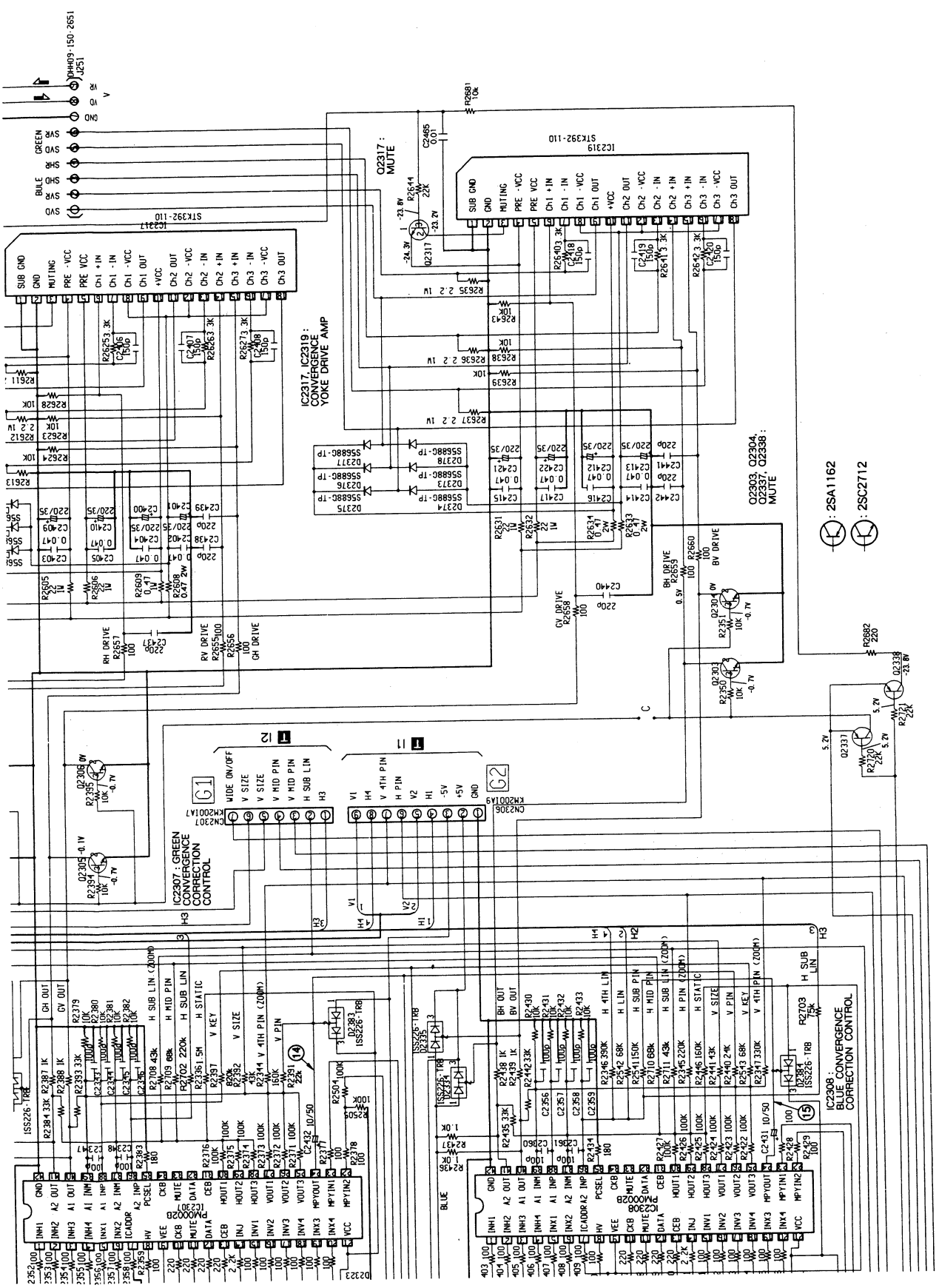

IC2309 : RED CONVERGENCE CORRECTION CONTROL
Q2335, Q2336 : INVERTER
Q2334 : BUFFER
IC2311(1/2) : 4TH DISTORTION V
IC2311(2/2) : 4TH DISTORTION H
: 2SA1162
: 2SC2712

U-a U-b

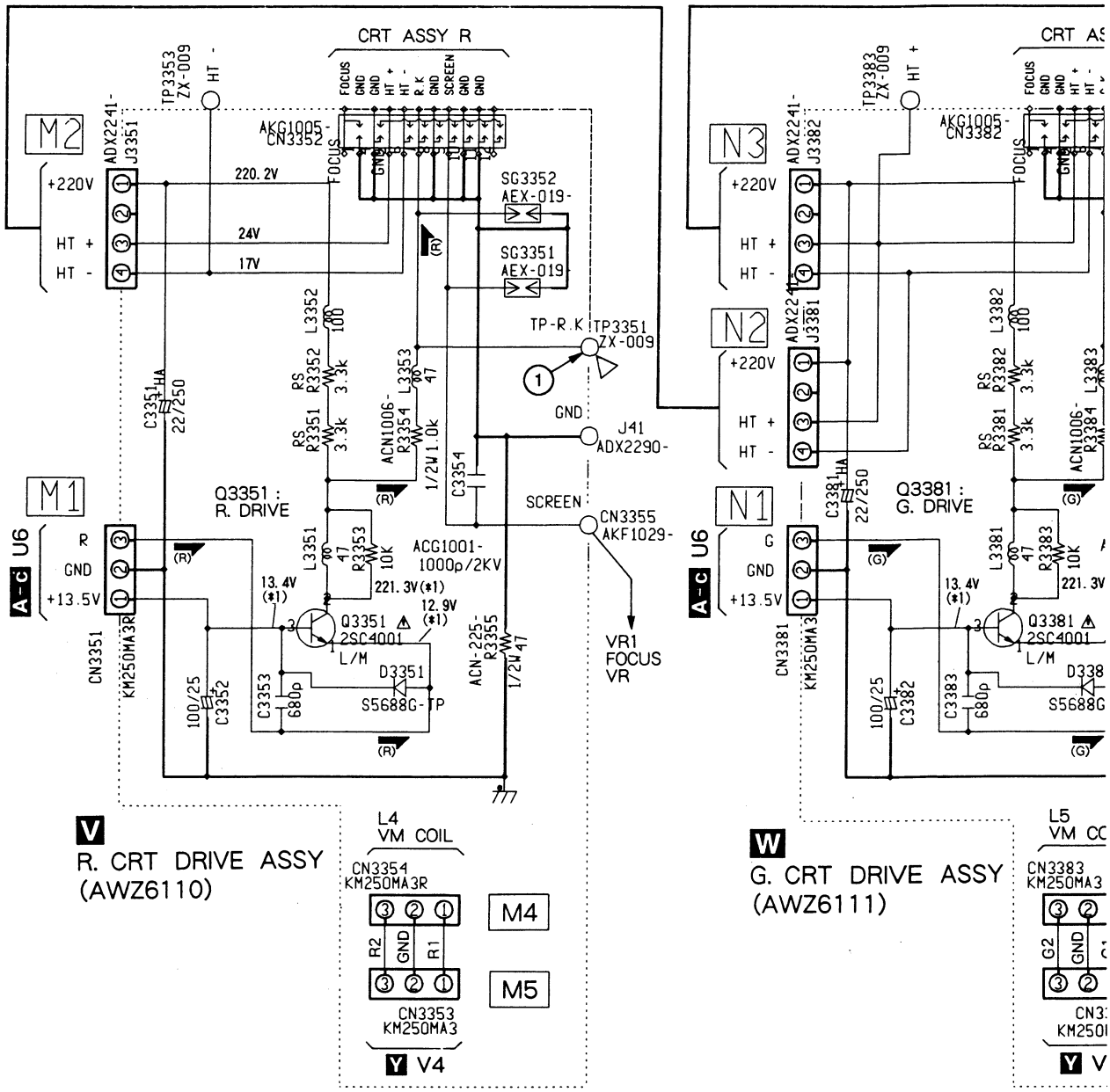

CONVERGENCE YOKES
V-AMP BLOCK
Q2318 : V. SIGNAL DET. for POWER DOWN (for CRT PROTECTION)
Q2313-Q2315 : V. OUT
Q2309, Q2311, Q2312 : V. CONTROL
IC2313(2/2) : CORRECTION SIGNAL MIXER (PIN-KEY)
IC2320 : V. CONTROL
Q2316 : MUTE
Q2305-Q2308 : MUTE
IC2323 CA0007AM
IC2313 NJM4558M-D
WIDE MUTE
V KUNERI IN
V KUNERI OUT
H MID PIN(V2xH3)
V SIZE(ZOOM)
RH DRIVE

U-b

U-a U-b

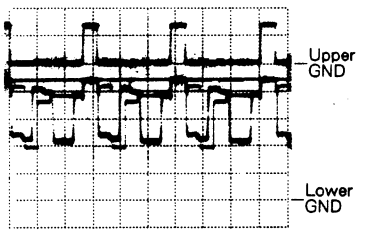

IC2317, IC2319 : CONVERGENCE YOKE DRIVE AMP
IC2307 : GREEN CONVERGENCE CORRECTION CONTROL
IC2308 : BLUE CONVERGENCE CORRECTION CONTROL
Q2317 : MUTE
Q2303, Q2304, Q2337, Q2338 : MUTE
: 2SA1162
: 2SC2712
STK392-110
PM0002B
SUB GND
GND
MUTING
PRE -VCC
PRE VCC
Ch1 +IN
Ch1 -IN
Ch1 VCC
Ch1 OUT
Ch2 OUT
Ch2 -VCC
Ch2 -IN
Ch2 +IN
Ch3 +IN
Ch3 -IN
Ch3 -VCC
Ch3 OUT
RH DRIVE
RV DRIVE
GH DRIVE
GV DRIVE
BH DRIVE
BV DRIVE
H SUB LIN (ZOOM)
H MID PIN
H STATIC
V KEY
V SIZE
V 4TH PIN (ZOOM)
V PIN
H 4TH LIN
H SUB PIN
H PIN (ZOOM)
V 4TH PIN
H SUB LIN
WIDE ON/OFF
V SIZE
V MID PIN
H SUB LIN
V 4TH PIN
H PIN
GND
BLUE
GREEN

3.22 R, G AND B CRT DRIVE ASSEMBLIES

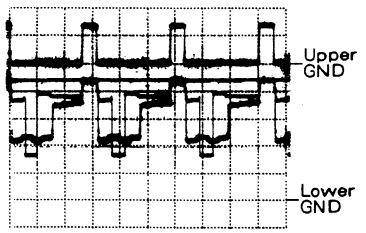


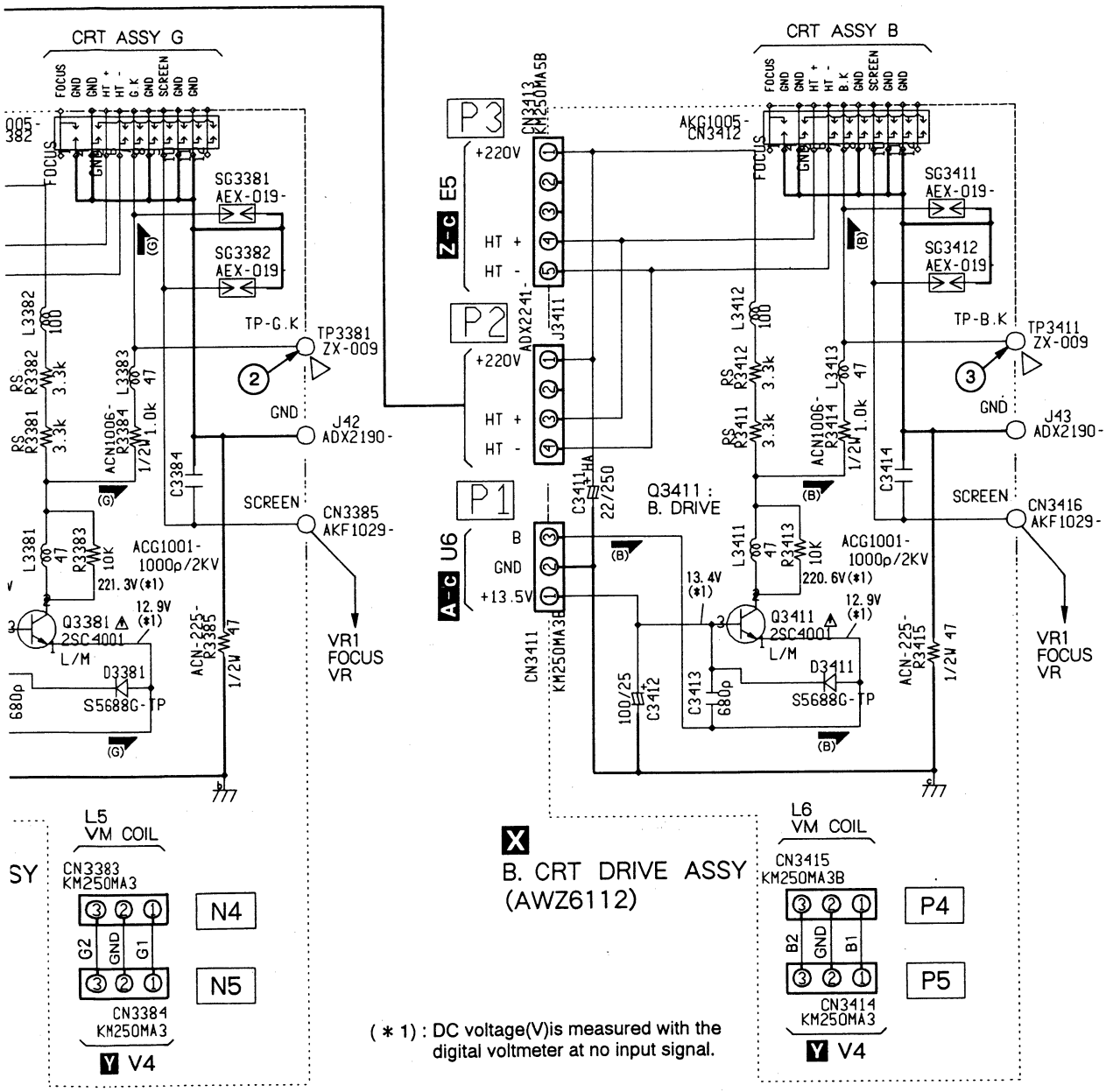
- Input signal : Color bar
- Picture quality : Standard
- Range : DC range (unless otherwise noted)

① Upper : U2-pin 10 (H. BLK) (A TUNER•VIDEO ASSY)
V: 10V/div. , H : 20 μS/div.
Lower : TP3351 (TP-R.K)
V : 50V/div. , H : 20 μS/div.



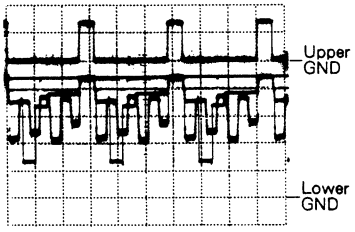
② Upper : U2-pin 10 (H. BLK) (A TUNER•VIDEO ASSY)
V: 10V/div. , H : 20 μS/div.
Lower : TP3381 (TP-G.K)
V : 50V/div. , H : 20 μS/div.



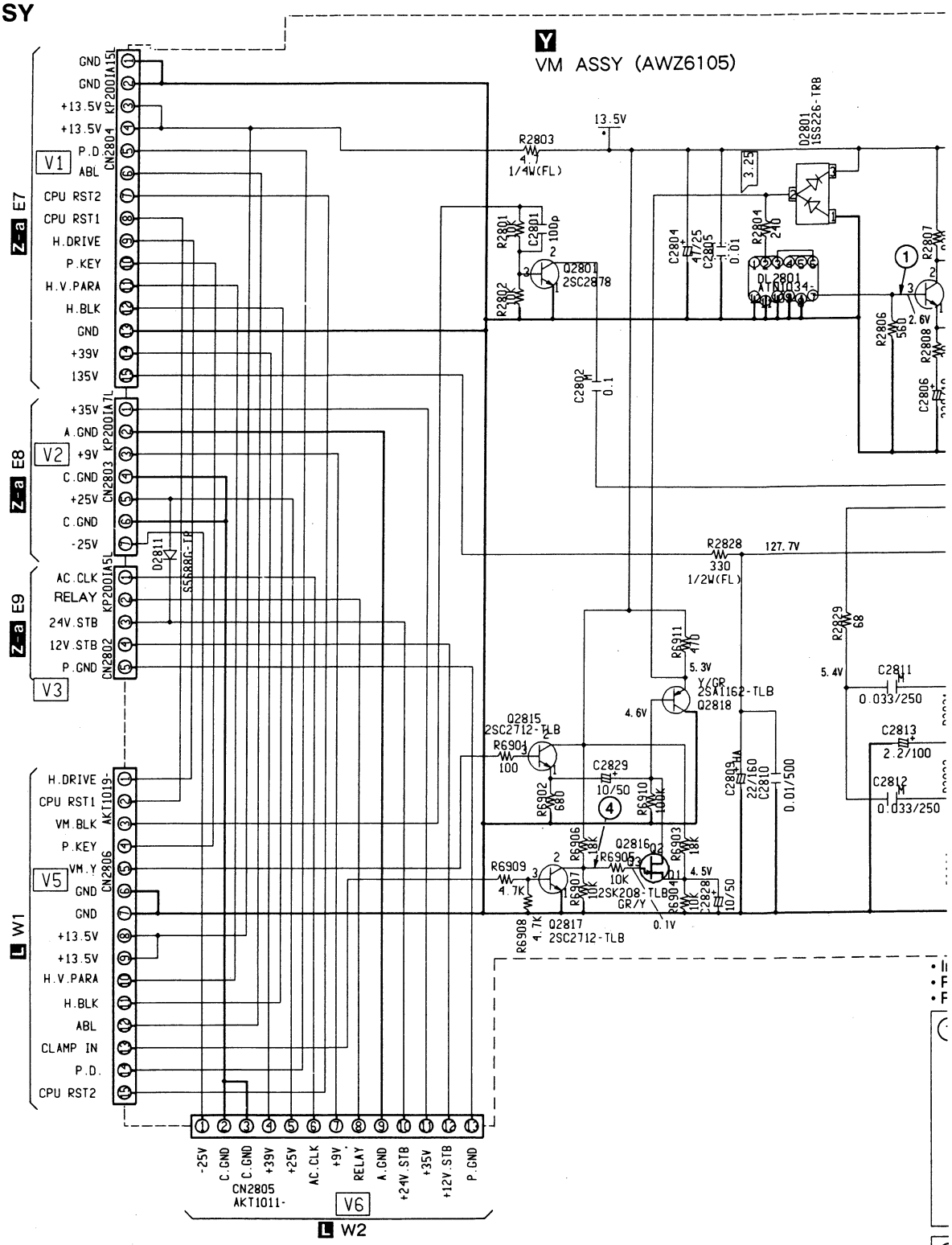


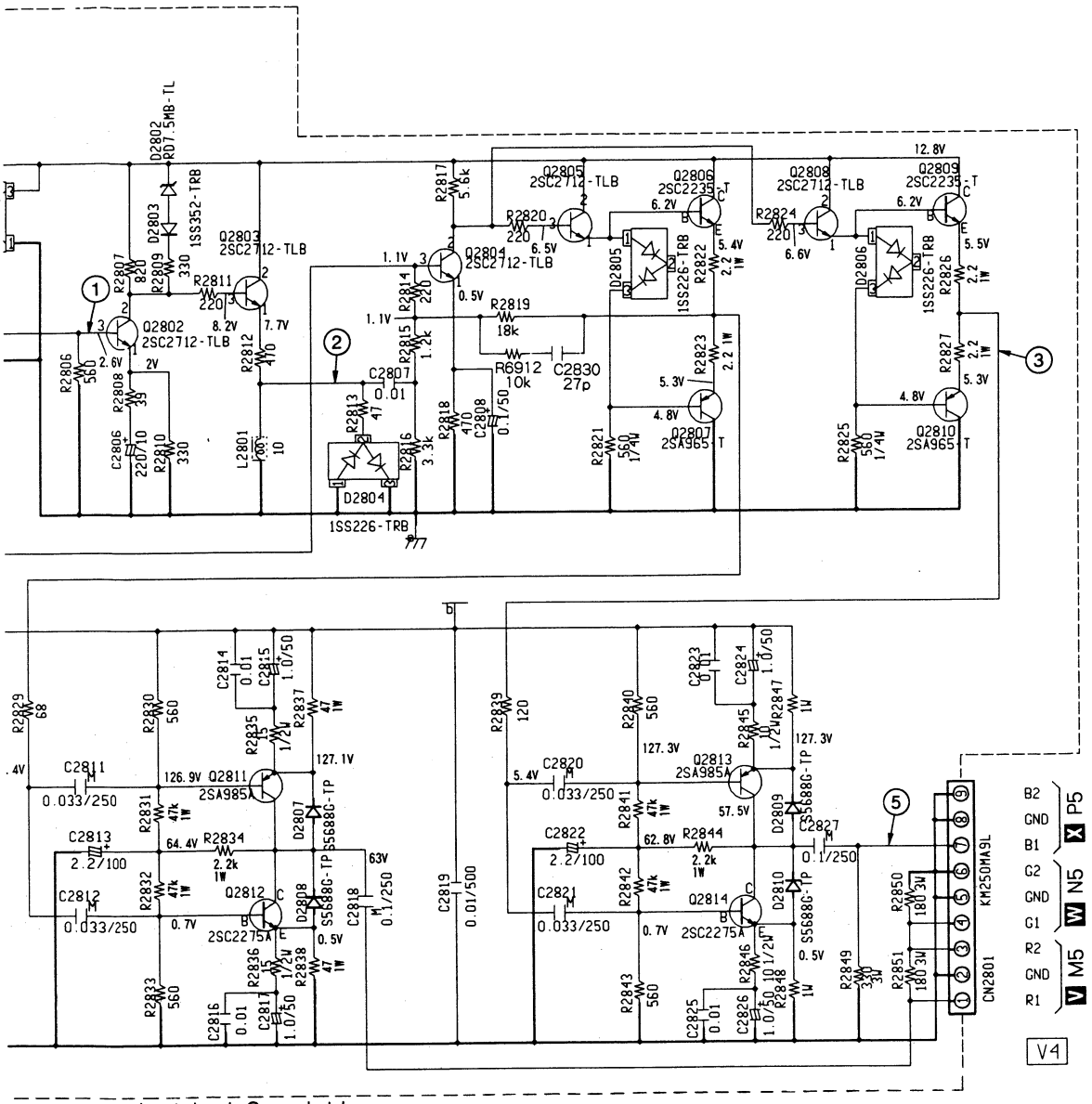
(*1) : DC voltage(V)is measured with the digital voltmeter at no input signal.

③ Upper : U2 pin 10 (H. BLK)
(A TUNER•VIDEO ASSY)
V: 10V/div. , H : 20 μS/div.
Lower : TP3411 (TP-B.K)
V : 50V/div. , H : 20 μS/div.



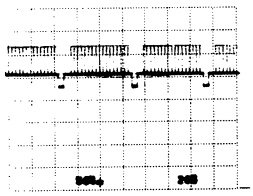
3.23 VM ASSY


Y
VM ASSY (AWZ6105)
GND
GND
+13.5V
+13.5V
P.D
ABL
CPU RST2
CPU RST1
H.DRIVE
P.KEY
H.V.PARA
H.BLK
GND
+39V
135V
CN2804 KP2001A15L
V1
Z-a E7
+35V
A.GND
+9V
C.GND
+25V
C.GND
-25V
CN2803 KP2001A7L
V2
Z-a E8
AC.CLK
RELAY
24V.STB
12V.STB
P.GND
CN2802 KP2001A5L
V3
Z-a E9
H.DRIVE
CPU RST1
VM.BLK
P.KEY
VM.Y
GND
GND
+13.5V
+13.5V
H.V.PARA
H.BLK
ABL
CLAMP IN
P.D.
CPU RST2
CN2806 AKT1019-
V5
L W1
-25V
C.GND
C.GND
+39V
+25V
AC.CLK
+9V
RELAY
A.GND
+24V.STB
+35V
+12V.STB
P.GND
CN2805 AKT1011-
V6
L W2
13.5V
R2803 4.7 1/4W(FL)
D2801 1SS226-TRB
3.25
R2801 680
C2801 100p
Q2801 2SC2878
R2802 680
C2802 0.1
C2804 47/25
C2805 0.01
R2804 240
DL2801 ATN10034
R2806 560
R2807
R2808
C2806
2.6V
D2811 S5588C-TR
R2828 330 1/2W(FL)
127.7V
R6911 470
5.3V
Y/GR 2SA1162-TLB Q2818
4.6V
Q2815 2SC2712-TLB
R6901 100
C2829 10/50
R6902 680
R6910 100K
R6906 18K
R6905 10K
Q2816 2SK208-TLB GR/Y
R6903 18K
R6907 1K
R6904 10K
C2828 10/50
4.5V
0.1V
R6909 4.7K
R6908 4.7K
Q2817 2SC2712-TLB
C2809 22/160
C2810 0.01/500
R2829 68
5.4V
C2811 0.033/250
C2813 2.2/100
C2812 0.033/250

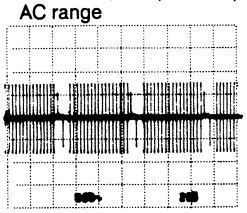


- Input signal : Cross-hatch
- Picture quality : Standard
- Range : DC range (unless otherwise noted)

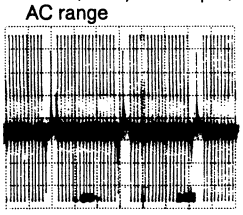
① Q2802 Base
V : 500mV/div. , H : 20 μS/div.



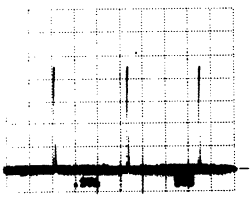
② Between L2801 and R2812
V : 500mV/div. , H : 20 μS/div.
AC range



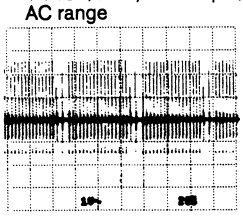
③ Between R2826 and R2827
V : 1V/div. , H : 20 μS/div.
AC range



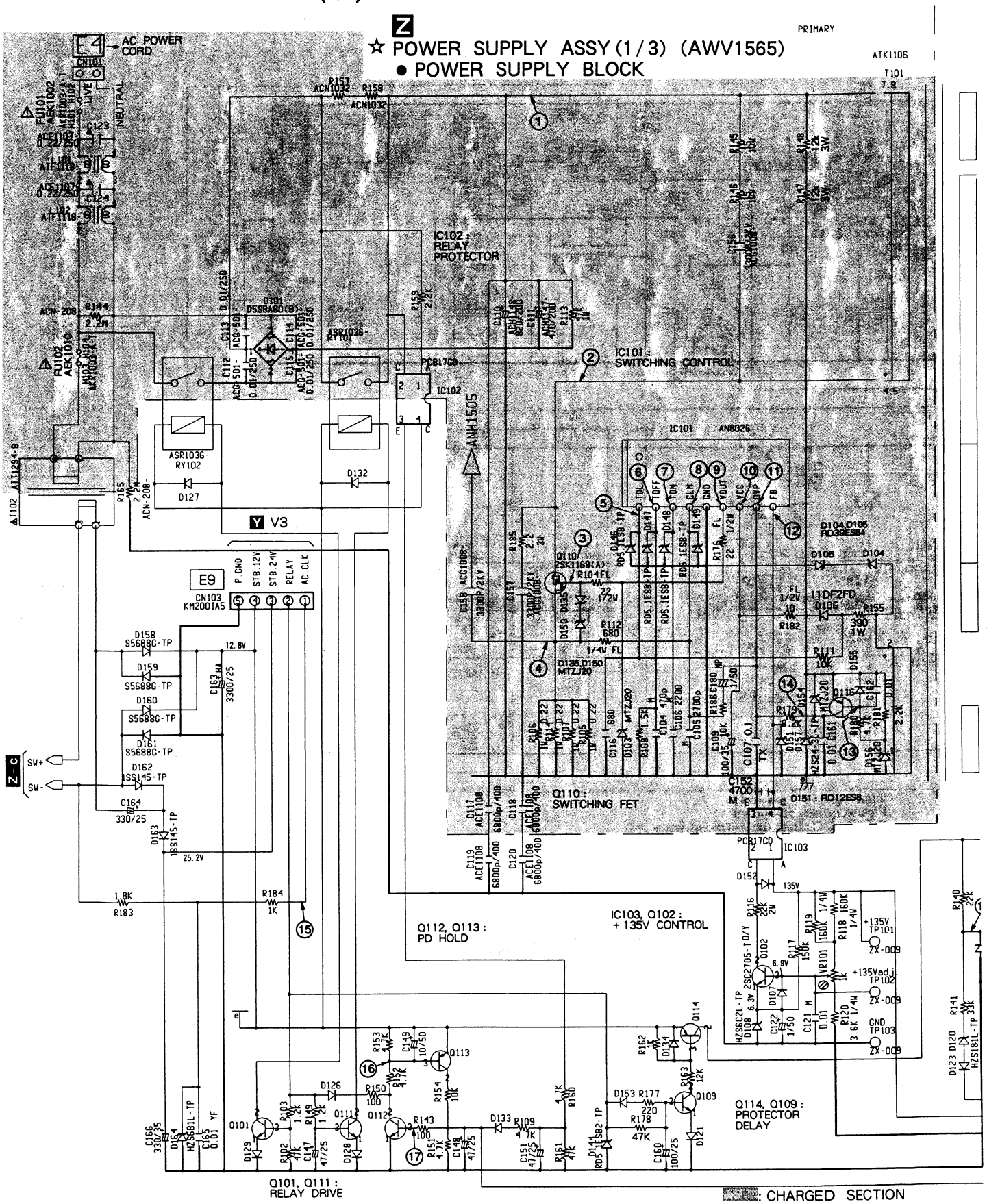
④ Q2817 Collector
V : 1V/div. , H : 20 μS/div.

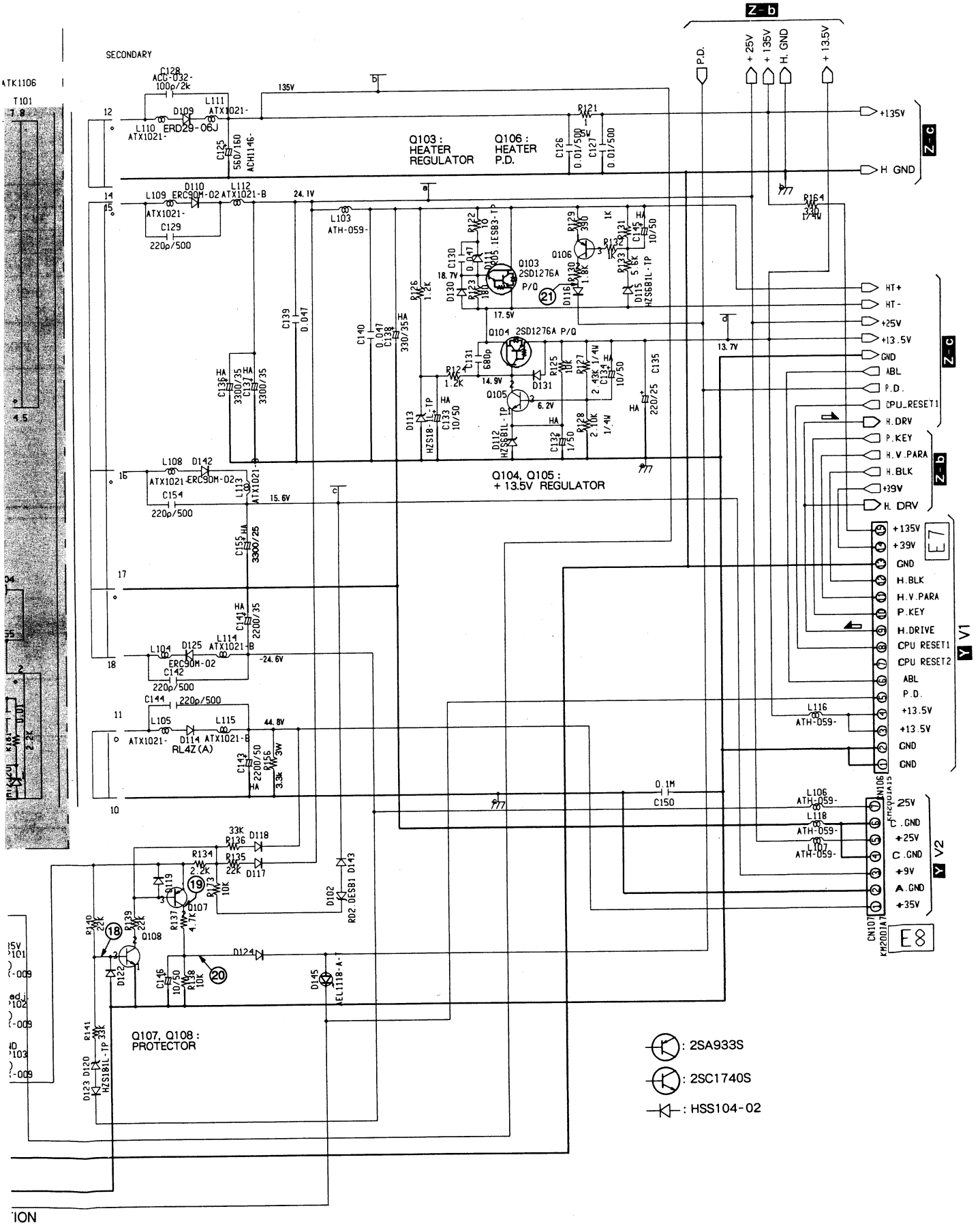


⑤ CN2801 - pin 7
V : 10V/div. , H : 20 μS/div.
AC range



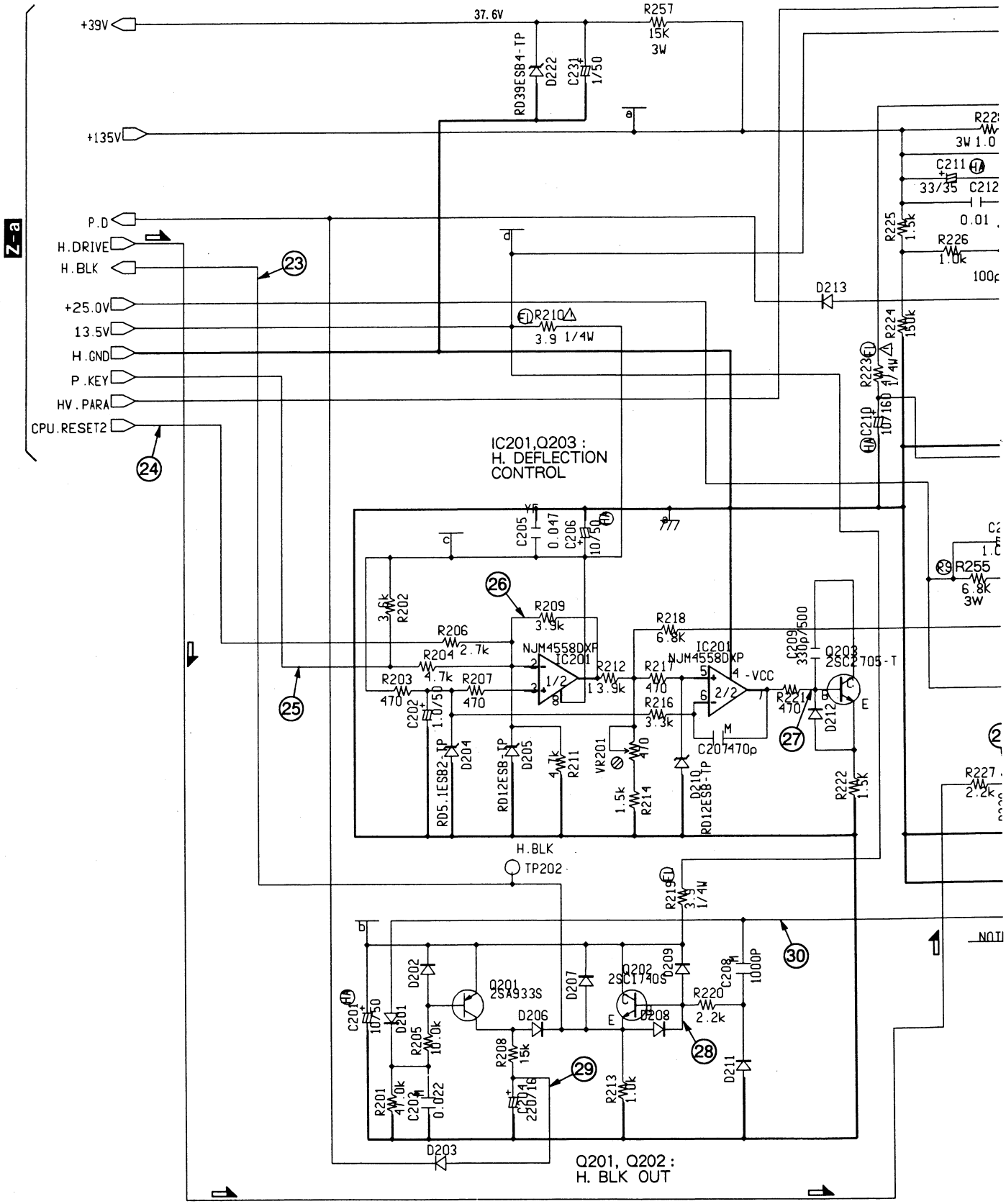
3.24 POWER SUPPLY ASSY (1/3)

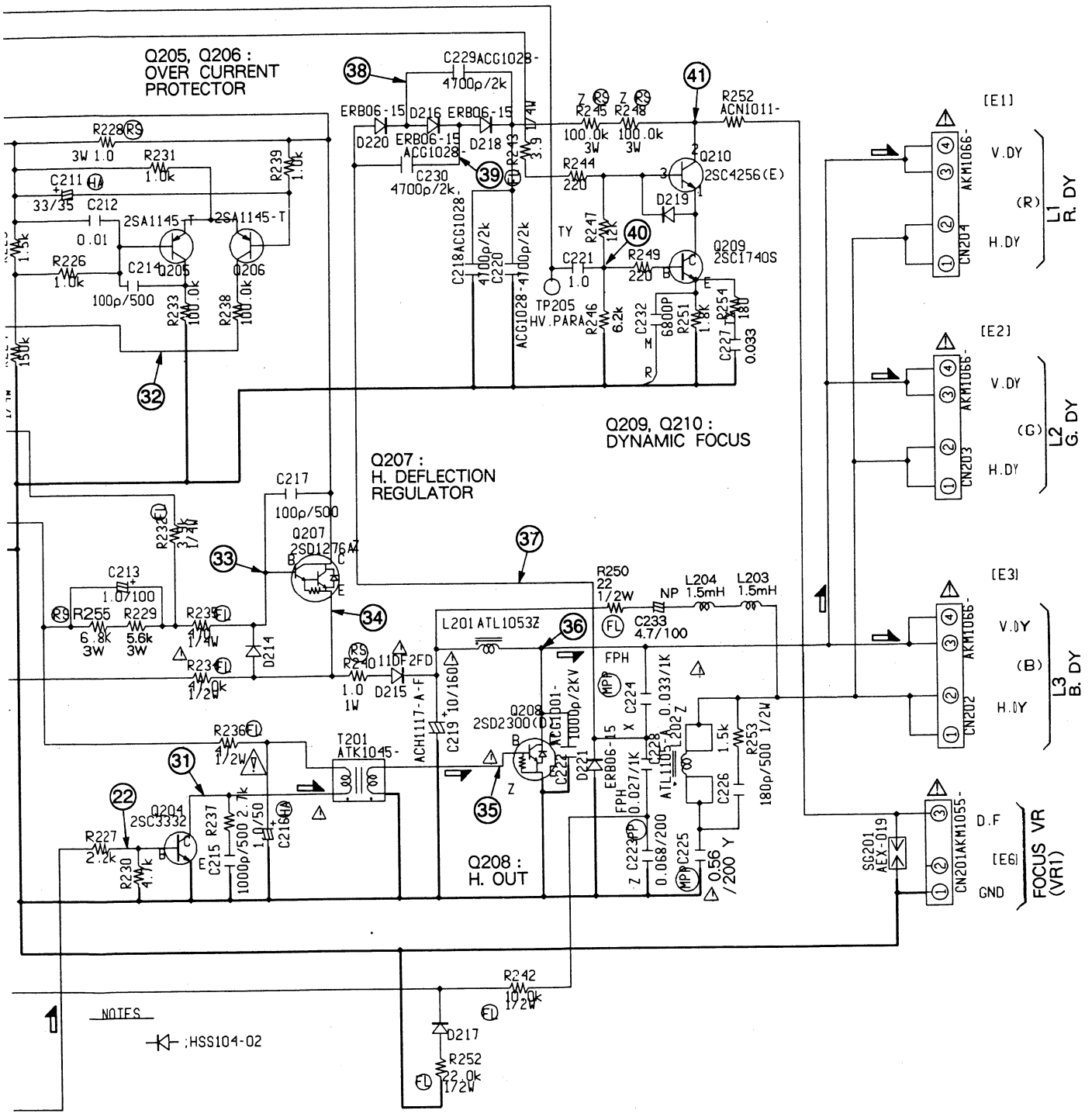



SECONDARY
Z-b
P.D.
+ 25V
+ 135V
H. GND
+ 13.5V
+135V
H GND
Q103 : HEATER REGULATOR
Q106 : HEATER P.D.
Q104, Q105 : + 13.5V REGULATOR
Q107, Q108 : PROTECTOR
HT+
HT-
+25V
+13.5V
GND
ABL
P.D.
CPU_RESET1
H.DRV
P.KEY
H.V.PARA
H.BLK
+39V
H. DRV
+135V
+39V
GND
H.BLK
H.V.PARA
P.KEY
H.DRIVE
CPU RESET1
CPU RESET2
ABL
P.D.
+13.5V
+13.5V
GND
GND
25V
C.GND
+25V
C.GND
+9V
A.GND
+35V
E7
E8
V1
V2
: 2SA933S
: 2SC1740S
: HSS104-02

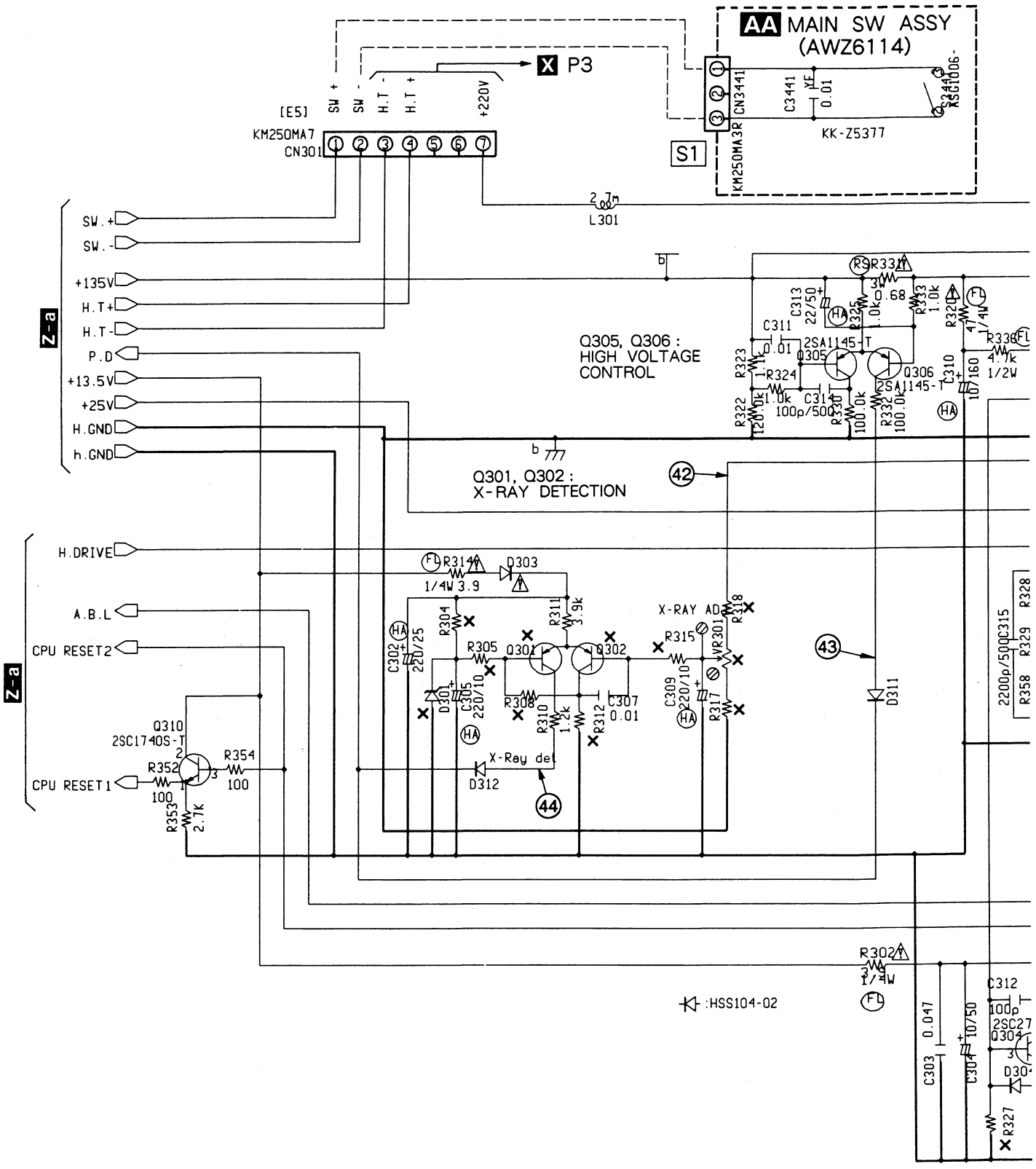
3.25 POWER SUPPLY ASSY (2/3)

Z☆ POWER SUPPLY ASSY (2/3) (AWV1565)
• DEFLECTION BLOCK

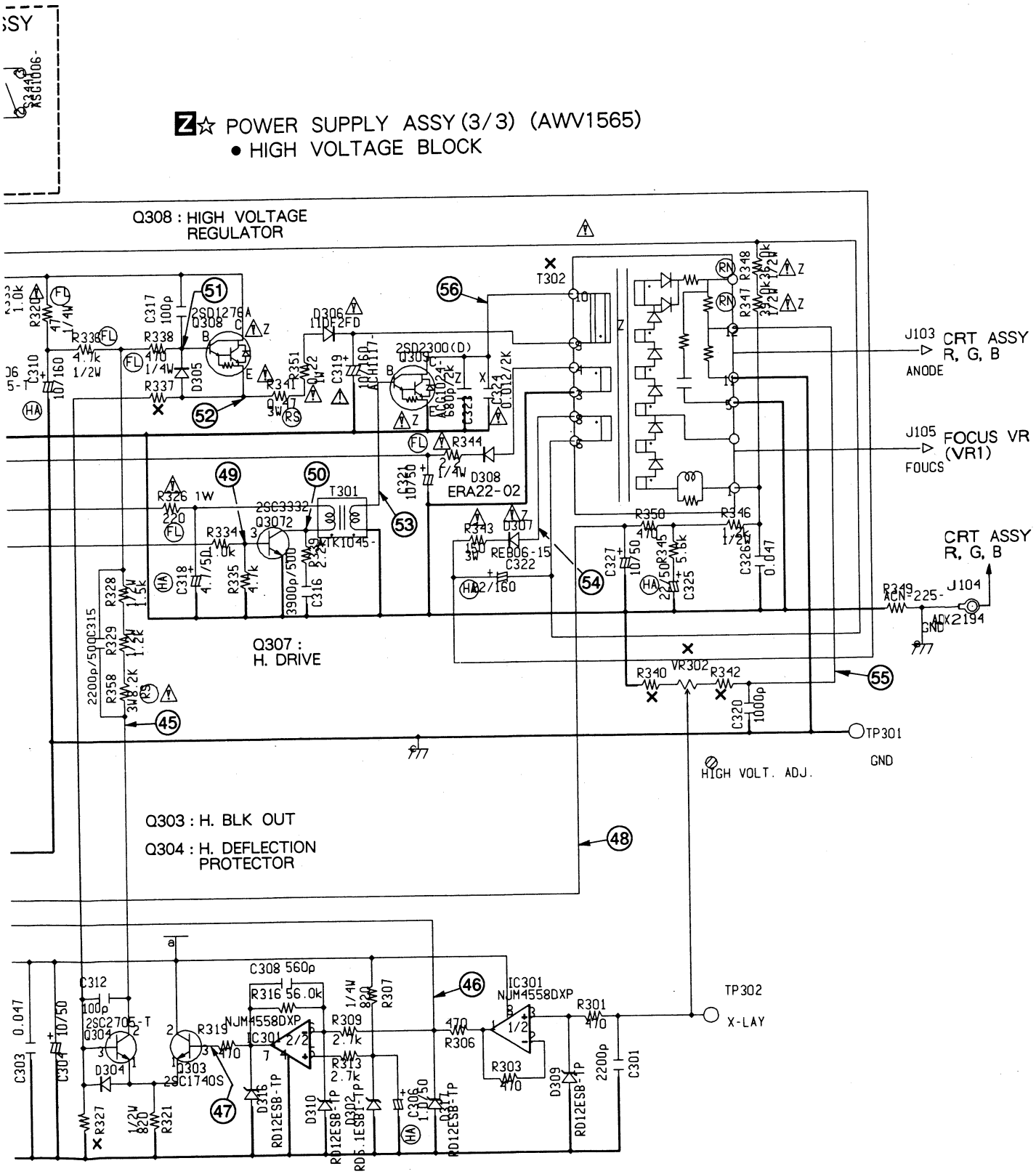



Q205, Q206 :
OVER CURRENT
PROTECTOR
Q207 :
H. DEFLECTION
REGULATOR
Q209, Q210 :
DYNAMIC FOCUS
Q208 :
H. OUT
NOTES
;HSS104-02
[E1]
[E2]
[E3]
[E6]
V.DY
H.DY
R. DY
G. DY
B. DY
D.F
GND
FOCUS VR
(VR1)

3.26 POWER SUPPLY ASSY (3/3) AND MAIN SW ASSY



Z☆ POWER SUPPLY ASSY (3/3) (AWV1565)
• HIGH VOLTAGE BLOCK

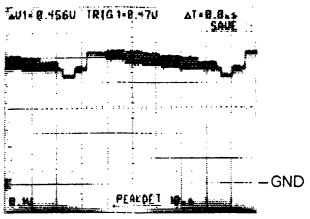


3.27 WAVEFORMS AND VOLTAGES

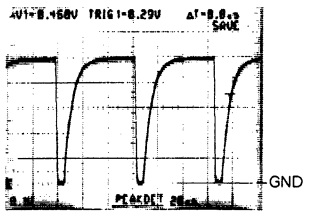
A-a TUNER • VIDEO ASSY (1/4) • TUNER BLOCK

- ANTENNA SELECT : ANT A
- Video signal : NTSC color bar , 87.5% modulation
- Audio signal : 1kHz sinewave, ± 25kHz deviation
- Range : DC range (Unless otherwise noted)

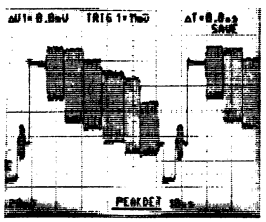
① -1 **TV FRONT END pin 18**
V : 1V/div. H : 10msec/div.



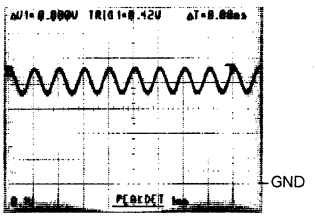
③ **Foot of R1226**
V : 1V/div. H : 20msec/div.



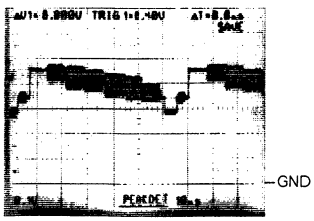
① -2 **TV FRONT END pin 18**
V : 0.2V/div. H : 10msec/div.
AC range



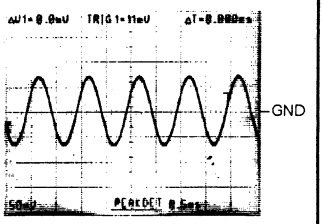
④ **TP1301 (MPX)**
V : 1V/div. H : 1msec/div.



② **U12- pin 7**
V : 1V/div. H : 10msec/div.



⑤ **U12- pin 3**
V : 0.5V/div. H : 0.5msec/div.



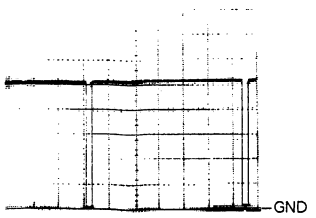
IC1301 (CXA1734S)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	—	16	3.1
2	—	17	0
3	0	18	4.0
4	0	19	4.0
5	1.3	20	4.1
6	1.3	21	4.0
7	4.0	22	1.7
8	4.0	23	4.0
9	6.4	24	4.0
10	5.3	25	4.0
11	4.0	26	1.7
12	4.5	27	1.3
13	4.0	28	4.1
14	4.0	29	4.1
15	8.9	30	0

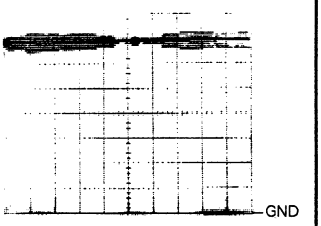
A-b, c TUNER • VIDEO ASSY (2/4) • VIDEO BLOCK

- Input signal : EIA color bar, LD/DVD input
- Picture quality : Standard
- Range : DC range (Unless otherwise noted)

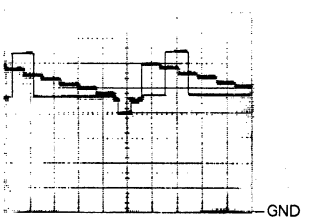
① **Q437 Collector**
V : 1V/div. H : 10 μsec/div.



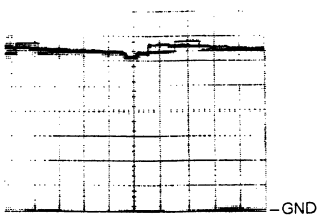
② **TP- 41 (C)**
V : 500mV/div. H : 10 μsec/div.

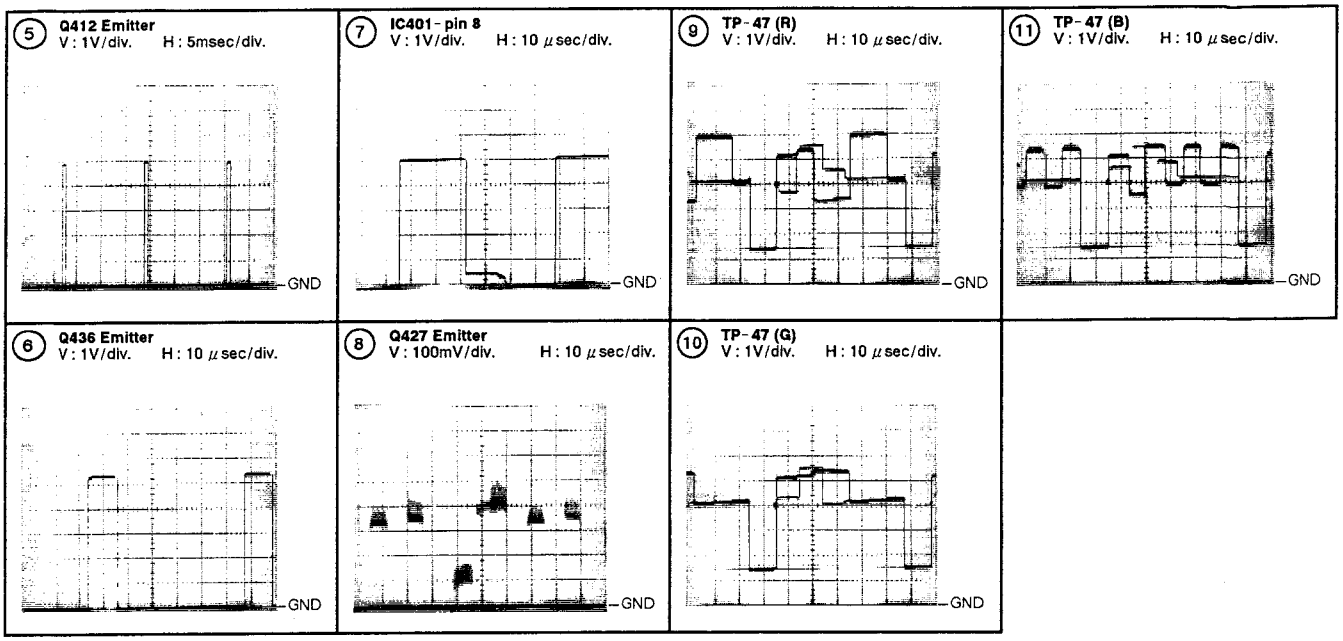


③ **IC401- pin 61**
V : 500mV/div. H : 10 μsec/div.



④ **TP- 05 (Y)**
V : 1V/div. H : 10 μsec/div.





IC401 (TA8845BN)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	12	8.1	23	0	34	5.5	45	0.5	56	3.2
2	0	13	1.1	24	0	35	5.5	46	8.9	57	4.6
3	6.1	14	0	25	0	36	0.5	47	3.0	58	4.7
4	0	15	4.8	26	0	37	9.0	48	12.2	59	6.0
5	6.1	16	4.8	27	0	38	9.0	49	0.5	60	0
6	2.2	17	0	28	0	39	4.0	50	7.2	61	2.3
7	9.0	18	3.5	29	4.5	40	6.2	51	4.8	62	5.0
8	2.0	19	3.5	30	4.5	41	9.0	52	6.5	63	0
9	0	20	3.5	31	4.5	42	6.1	53	6.0	64	0
10	5.5	21	12.2	32	1.9	43	8.7	54	3.2		
11	0.7	22	0	33	0.5	44	0	55	8.9		

A-d TUNER • VIDEO ASSY (3/4)
• UCOM BLOCK

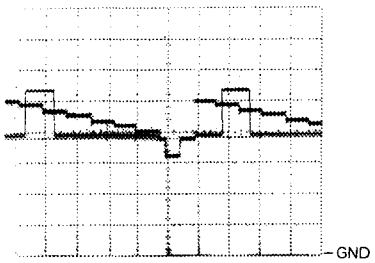
IC801 (PD5363A)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	4.8	12	5.1	23	4.9	34	5.1	45	4.5	56	2.1
2	4.8	13	0	24	5.1	35	5.1	46	0	57	6.7
3	2	14	0	25	0	36	5.1	47	5.1	58	0
4	5	15	5.1	26	0	37	0	48	0	59	8.4
5	4.9	16	0	27	0	38	5.1	49	5.9	60	1.5
6	4.9	17	5.1	28	—	39	0	50	5.1	61	0
7	4.9	18	0	29	0	40	0	51	0	62	0
8	0	19	5.1	30	4.2	41	0	52	0	63	0
9	3	20	0	31	4.6	42	4.5	53	4.5	64	0
10	5.1	21	0	32	0	43	5.1	54	0		
11	0	22	0	33	5.1	44	1.5	55	7.6		

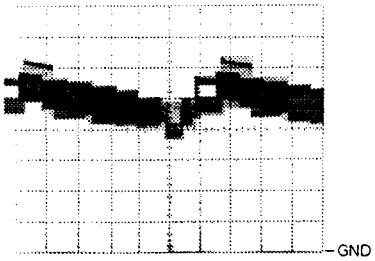
O-a P IN P ASSY (1/3)
• P IN P BLOCK

• Input signal : Color bar (LD)
• P IN P : OFF
• DC range (Unless otherwise noted.)

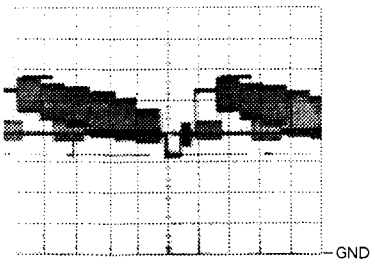
1 **IC3004 pin 1 (M.Y in)**
V : 0.5V/div. , H : 10 μsec/div.



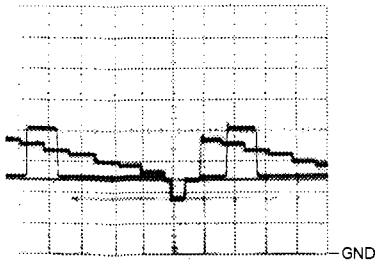
2 **IC3004 pin 3 (M.C in)**
V : 0.5V/div. , H : 10 μsec/div.



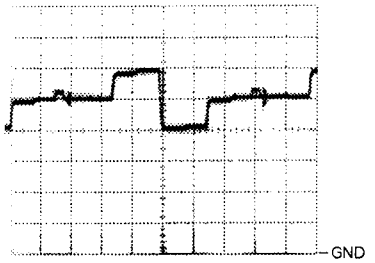
3 **IC3004 pin 56 (S.V)**
V : 0.5V/div. , H : 10 μsec/div.



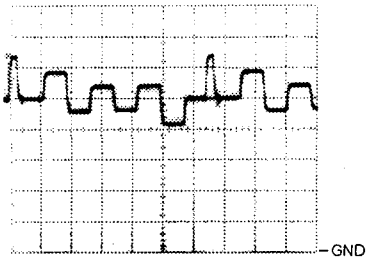
4 **IC3002 pin 6 (A.D.Y)**
V : 1V/div. , H : 10 μsec/div.



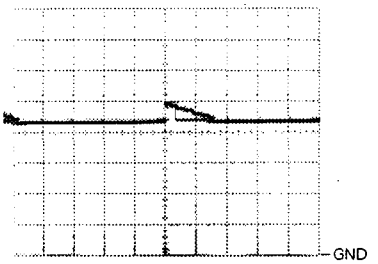
5 **IC3002 pin 8 (A.D. R-Y)**
V : 0.5V/div. , H : 10 μsec/div.



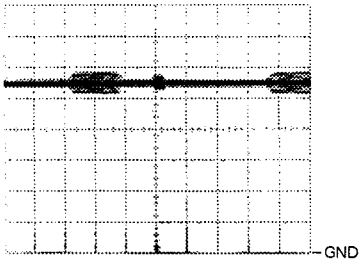
6 **IC3002 pin 10 (A.D. B-Y)**
V : 0.5V/div. , H : 10 μsec/div.



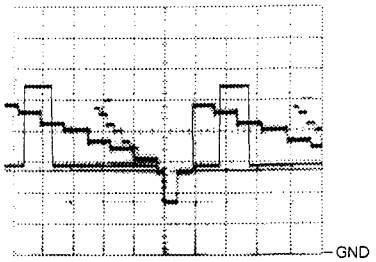
7 **IC3004 pin 28 (A.D.Y)**
V : 1V/div. , H : 10 μsec/div.



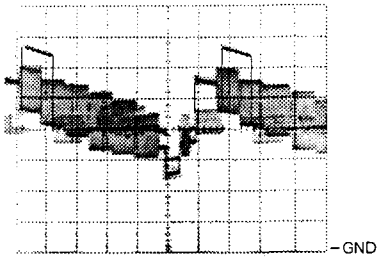
8 **IC3004 pin 25 (A.D.C)**
V : 0.5V/div. , H : 10 μsec/div.



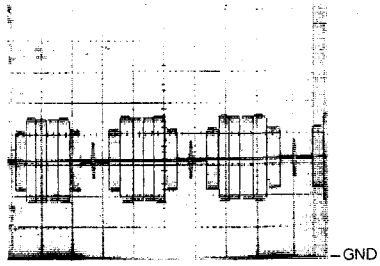
9 **IC3004 pin 17 (M.Y out)**
V : 0.5V/div. , H : 10 μsec/div.



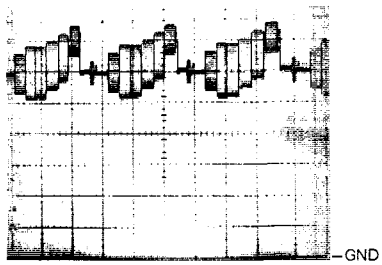
10 **IC3004 pin 15 (M.C out)**
V : 0.5V/div. , H : 10 μsec/div.



11 **Q1803 Emitter**
V : 500mV/div. , H : 20 μsec/div.



12 **Q1807 Emitter**
V : 1V/div. , H : 20 μsec/div.



Input signal : Color bar

IC3004 (HA11579)

No.	Voltage (V)	No.	Voltage (V)
1	2.14	29	2.55
2	0	30	2.53
3	2.47	31	3.16
4	0.02	32	3.14
5	5.01	33	1.54
6	0	34	2.57
7	1.86	35	2.89
8	1.89	36	4.26
9	3.61	37	2.28
10	3.57	38	2.58
11	2.53	39	2.1
12	3.76	40	0.45
13	2.56	41	0.45
14	2.78	42	2.1
15	2.33	43	0.01
16	1.58	44	4.14
17	1.72	45	—
18	2.96	46	0.15
19	0.06 (PINP OFF) 0.34 to 0.51 (PINP ON)	47	0
20	4.95	48	0.64
21	0	49	1.59
22	2.72	50	0
23	1.94	51	5
24	4.95	52	1.59
25	2.74	53	0.65
26	0	54	4.14
27	2.33	55	—
28	2.33	56	2.27

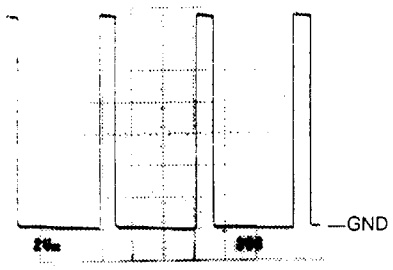
IC3002 (HD49420FS)

No.	Voltage (V)	No.	Voltage (V)
1	0	41	—
2	1.09	42	—
3	5.02	43	—
4	1.47	44	—
5	3.25	45	—
6	2.26	46	—
7	4.27	47	—
8	2.52	48	4.99
9	2.51	49	—
10	2.54	50	—
11	1.77	51	—
12	0	52	—
13	2.52	53	—
14	2.54	54	—
15	5.02	55	—
16	2.37	56	—
17	2.41	57	—
18	5.02	58	—
19	3.57	59	—
20	3.57	60	—
21	2.45	61	—
22	4.37	62	—
23	5	63	—
24	4.73	64	—
25	2.45	65	—
26	3.55	66	—
27	3.54	67	—
28	0	68	—
29	2.2	69	—
30	0	70	—
31	2.29	71	4.1
32	5	72	0.15
33	0.06	73	—
34	0.06 (PINP OFF) 0.34 to 0.51 (PINP ON)	74	4.11
35	—	75	2.58
36	—	76	0.02
37	—	77	2.12
38	—	78	2.12
39	—	79	0
40	—	80	1.66

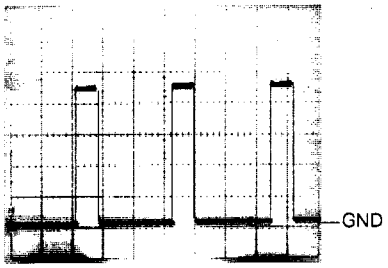
S FULL CINEMA MUTE ASSY

- Input signal : Color bar
- Picture quality : Standard
- Range : DC range (Unless otherwise noted)

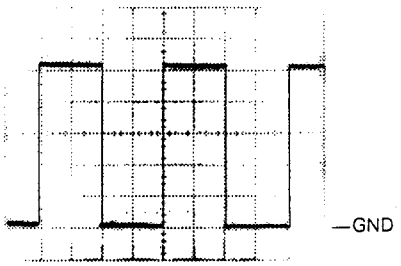
(1) L1 - pin 7 (H. BLK)
V : 2V/div. , H : 20 μsec/div.



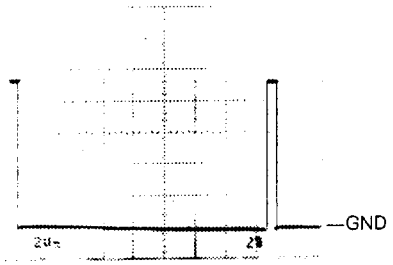
(4) - 2 Q2002 Collector
V : 1V/div. , H : 20 μsec/div.
(H rate)



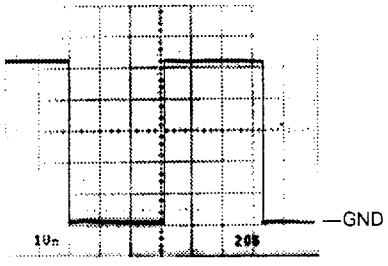
(8) IC2001 pin 3
V : 1V/div. , H : 0.5msec/div.



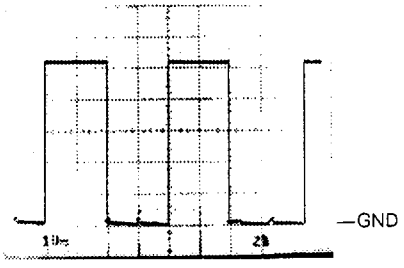
(2) L1 - pin 6 (V. BLK)
V : 2V/div. , H : 2msec/div.



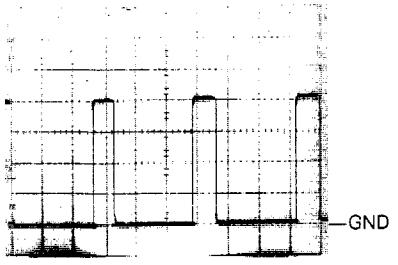
(5) IC2001 pin 9
V : 1V/div. , H : 20 μsec/div.



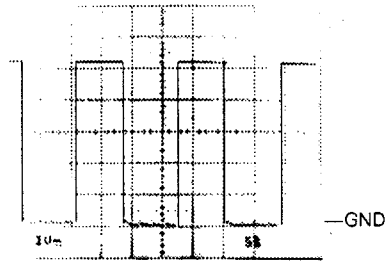
(9) IC2001 pin 4
V : 1V/div. , H : 2msec/div.



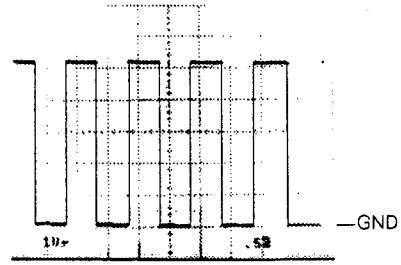
(3) L1 - pin 4 (WIDE MUTE 2)
V : 1V/div. , H : 5msec/div.



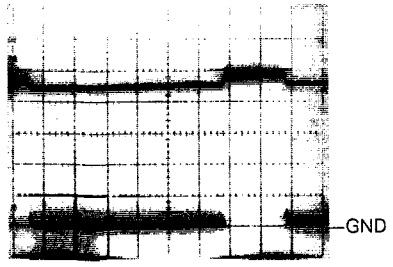
(6) IC2001 pin 13
V : 1V/div. , H : 5msec/div.



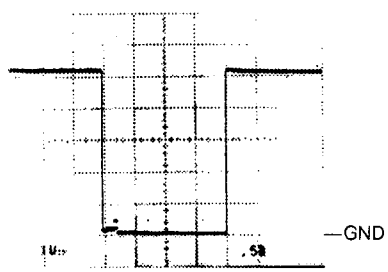
(10) IC2001 pin 5
V : 1V/div. , H : 0.5msec/div.



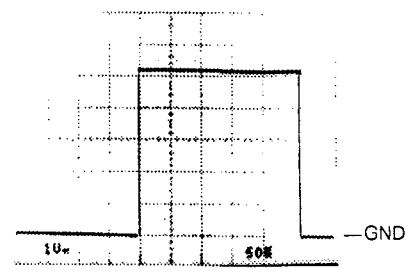
(4) - 1 Q2002 Collector
V : 1V/div. , H : 2msec/div.
(V rate)



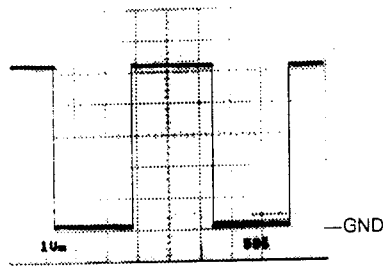
(7) IC2001 pin 2
V : 1V/div. , H : 0.5msec/div.



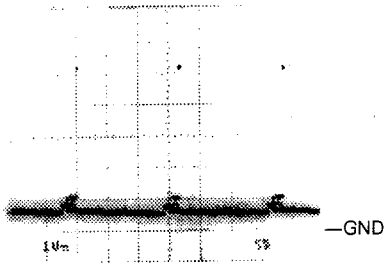
(11) IC2001 pin 6
V : 1V/div. , H : 50 μsec/div.



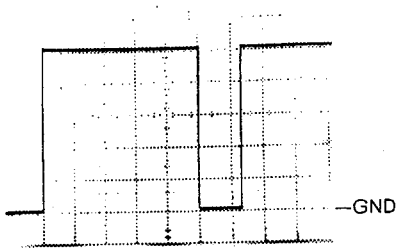
(12) **IC2001 pin 7**
V : 1V/div. , H : 50 μsec/div.



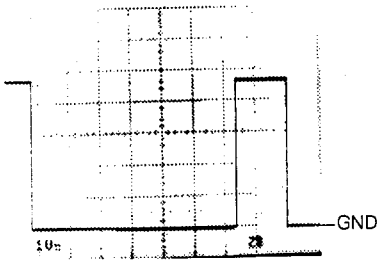
(16) **IC2009 pin 11**
V : 1V/div. , H : 5msec/div.



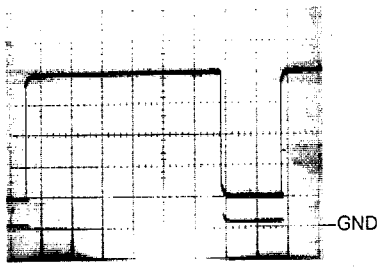
(20) **IC2005 pin 9**
V : 1V/div. , H : 10 μsec/div.



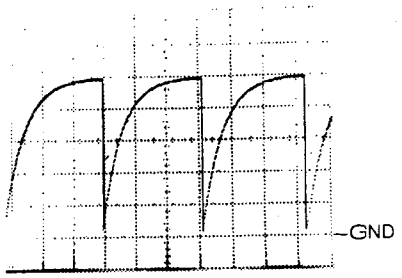
(13) **IC2009 pin 2**
V : 1V/div. , H : 2msec/div.



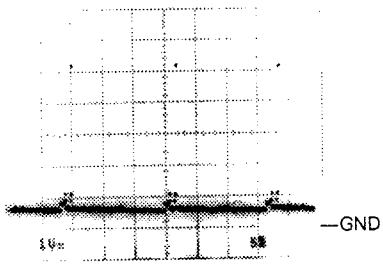
(17) **D2032 Cathode**
(or IC2009 pin 13)
V : 1V/div. , H : 2msec/div.



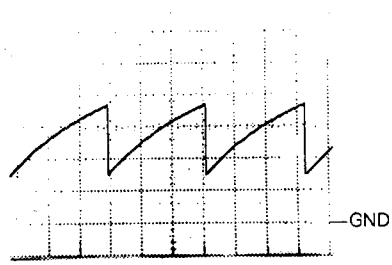
(21) **IC2005 pin 14**
V : 1V/div. , H : 20 μsec/div.



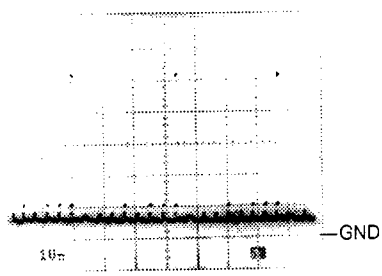
(14) **IC2009 pin 3**
V : 1V/div. , H : 5msec/div.



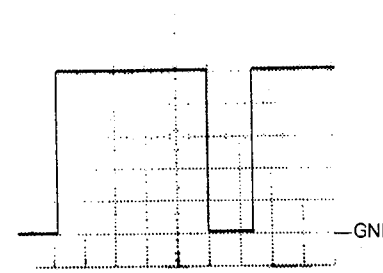
(18) **IC2005 pin 2**
V : 1V/div. , H : 20 μsec/div.



(15) **IC2009 pin 4**
V : 1V/div. , H : 5msec/div.

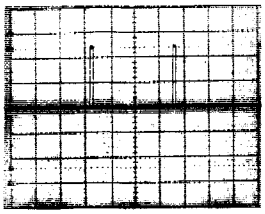
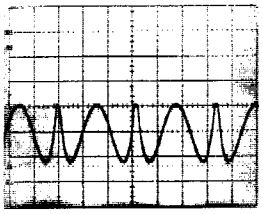
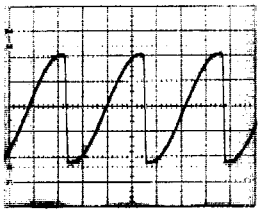
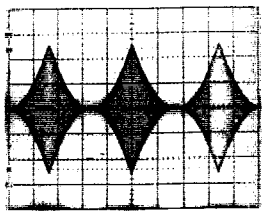
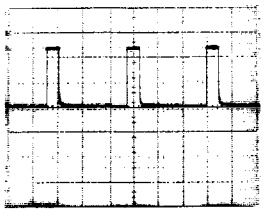
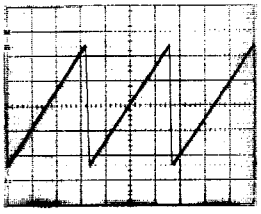
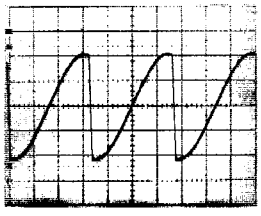
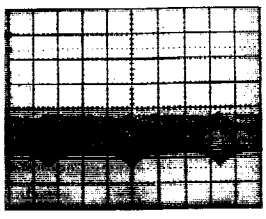
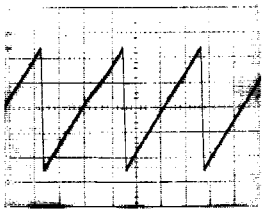
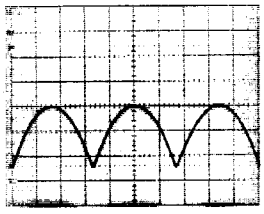
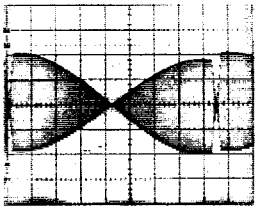
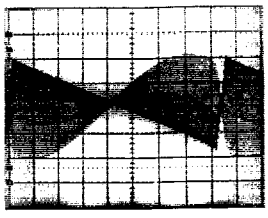
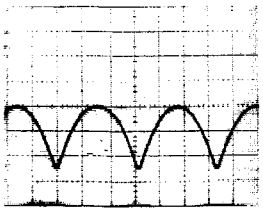
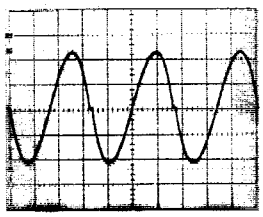
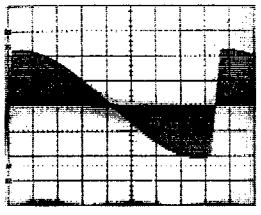
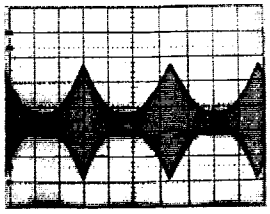
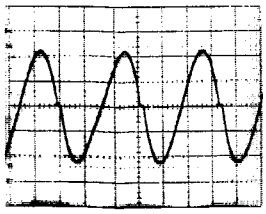
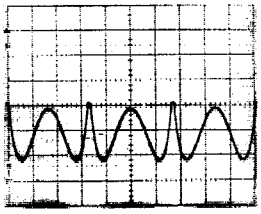
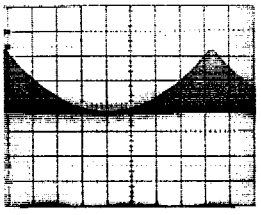
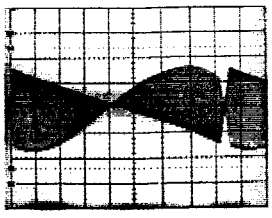


(19) **IC2005 pin 6**
V : 1V/div. , H : 10 μsec/div.

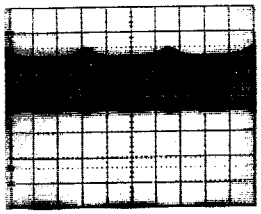


U CONVERGENCE ASSY

- Input signal : Color bar
- Picture quality : Standard
- Range : DC range (Unless otherwise noted)

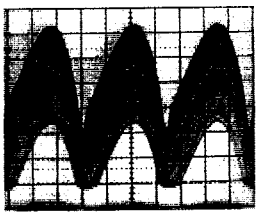
① **G3 - pin 13** V : 2V/div. H : 5msec/div. 	⑥ **IC2301 - pin 7** V : 1V/div. H : 20 μsec/div. 	⑪ **IC2311 - pin 7** V : 0.5V/div. H : 20 μsec/div. 	⑯ **IC2323 - pin 9** V : 0.5V/div. H : 5msec/div. 
② **G3 - pin 12** V : 5V/div. H : 20 μsec/div. 	⑦ **IC2302 - pin 4** V : 0.5V/div. H : 5msec/div. 	⑫ **IC2311 - pin 1** V : 0.5V/div. H : 20 μsec/div. 	⑰ **G4 - pin 4** V : 0.5V/div. H : 5msec/div. 
③ **IC2301 - pin 4** V : 0.5V/div. H : 20 μsec/div. 	⑧ **IC2302 - pin 5** V : 1V/div. H : 5msec/div. 	⑬ **C2374 - side** V : 0.5V/div. H : 2msec/div. 	⑱ **G4 - pin 6** V : 0.5V/div. H : 2msec/div. 
④ **IC2301 - pin 5** V : 1V/div. H : 20 μsec/div. 	⑨ **IC2302 - pin 6** V : 0.5V/div. H : 5msec/div. 	⑭ **C2432 - side** V : 0.5V/div. H : 2msec/div. 	⑲ **G5 - pin 4** V : 0.2V/div. H : 5msec/div. 
⑤ **IC2301 - pin 6** V : 0.5V/div. H : 20 μsec/div. 	⑩ **IC2302 - pin 7** V : 1V/div. H : 5msec/div. 	⑮ **C2431 - side** V : 0.5V/div. H : 2msec/div. 	⑳ **G5 - pin 6** V : 0.5V/div. H : 2msec/div. 

(21) G6 - pin 4
V : 0.5V/div. H : 5msec/div.

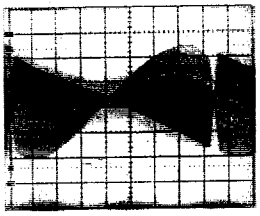


(23) IC2320 - pin 7
V : 0.5V/div. H : 5msec/div.

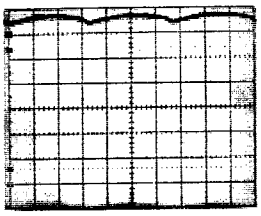
(25) IC2303 - pin 1
V : 1V/div. H : 5msec/div.



(22) G6 - pin 6
V : 0.5V/div. H : 2msec/div.



(24) D2354 Cathode
V : 2V/div. H : 5msec/div.



(26) G4 - pin 2
V : 0.5V/div. H : 5msec/div.

IC2301 (PA0053B)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0.4	10	0
2	1.4	11	0.5
3	5	12	− 0.9
4	0	13	0.3
5	− 0.8	14	1.2
6	0	15	0
7	− 1	16	− 1.7
8	0	17	1.2
9	− 4.9	18	− 1.5

IC2302 (PA0053B)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0.1	10	0
2	1.2	11	0.4
3	5	12	− 0.9
4	0	13	0.3
5	− 0.8	14	1.2
6	0	15	0
7	− 1	16	− 0.6
8	0	17	1.2
9	− 4.9	18	− 1.6

IC2317 (STK392-110)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	10	24
2	0	11	0.2
3	− 23.2	12	− 24.4
4	− 24.3	13	0
5	23.8	14	0
6	− 0.6	15	− 0.1
7	− 0.6	16	− 0.1
8	− 24.4	17	− 24.4
9	− 0.3	18	0.2

IC2307 (PM0002B)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	12	0.2	23	0	34	—
2	− 0.8	13	5.1	24	0	35	0
3	0	14	− 2.1	25	0	36	0
4	− 1	15	0	26	0	'37	0
5	0	16	− 0.8	27	0	38	0
6	− 0.4	17	0	28	0	39	0
7	0	18	− 0.8	29	0	40	0
8	5	19	0	30	0	41	− 0.1
9	− 4.9	20	− 0.6	31	—	42	0
10	0.2	21	5	32	—		
11	5.1	22	− 0.4	33	—		

IC2308 (PM0002B)

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	12	0.2	23	− 0.4	34	—
2	− 0.8	13	5.1	24	0.1	35	0
3	0	14	− 2.2	25	− 0.3	36	0
4	− 1	15	0	26	0	37	0
5	0	16	− 0.8	27	0	38	0
6	—	17	0	28	0	39	0
7	− 4.9	18	− 0.8	29	0	40	0
8	5	19	0	30	0	41	0.5
9	− 4.9	20	− 0.6	31	—	42	0
10	0.2	21	5	32	—		
11	5.1	22	− 0.4	33	—		

IC2309 (PM0002B)

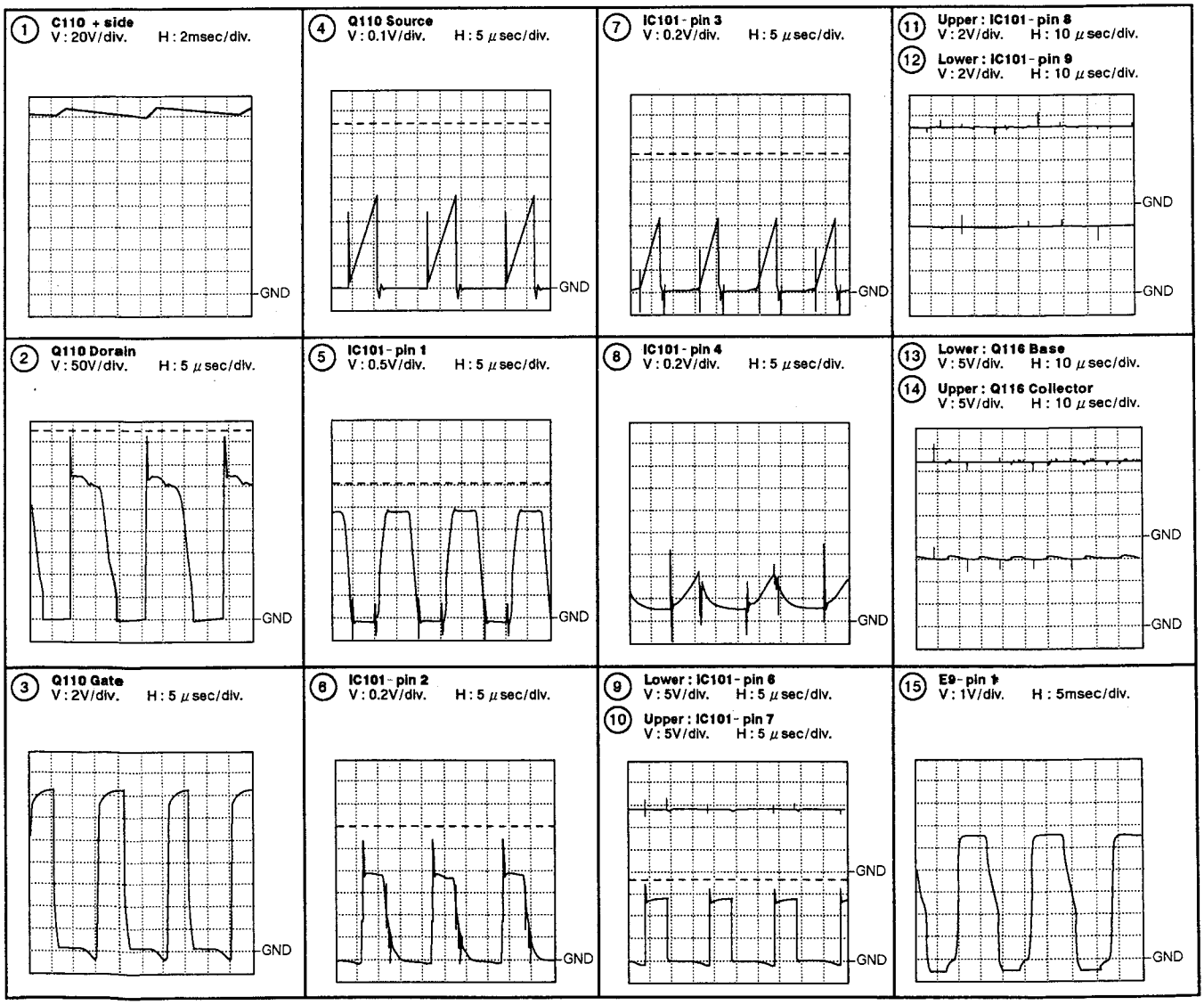
Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	12	0.2	23	0	34	—
2	− 0.8	13	5.1	24	0	35	0
3	0	14	− 2.1	25	− 0.2	36	0
4	− 1	15	0	26	0	37	0
5	0	16	− 0.8	27	0	38	0
6	− 0.2	17	0	28	0	39	0
7	5	18	− 0.8	29	− 0.2	40	0
8	5	19	0	30	0	41	− 0.6
9	− 4.9	20	− 0.6	31	—	42	0
10	0.2	21	5	32	—		
11	5.1	22	0	33	—		

IC2319 (STK392-110)

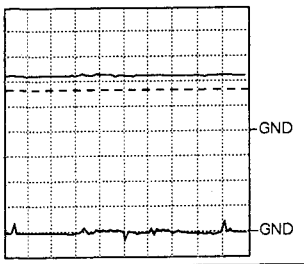
Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	10	23.8
2	0	11	0.9
3	− 23.2	12	− 24.6
4	− 24.3	13	0.5
5	23.8	14	0.5
6	0	15	0
7	0	16	0
8	− 24.6	17	− 24.6
9	0.1	18	0.1

Z POWER SUPPLY ASSY

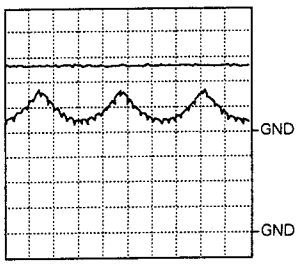
- Input signal : Color bar
- Picture quality : Standard
- Range : DC range (Unless otherwise noted)



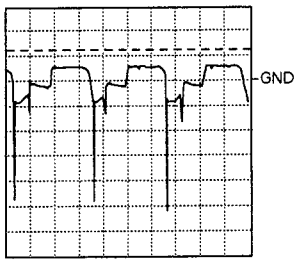
(16) **Upper : Q113 Base**
V : 5V/div. H : 5 μsec/div.
(17) **Lower : Q112 Base**
V : 0.5V/div. H : 5 μsec/div.



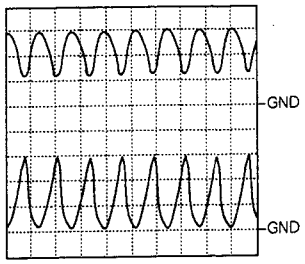
(28) **Upper : IC201 - pin 2**
V : 5V/div. H : 5msec/div.
(27) **Lower : Q203 Base**
V : 2V/div. H : 5msec/div.



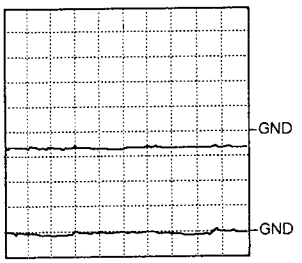
(35) **Q208 Base**
V : 2V/div. H : 20 μsec/div.



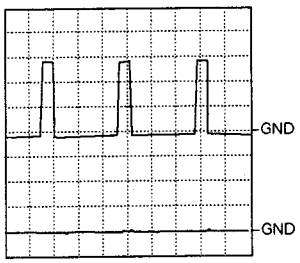
(40) **Between R246 and R247**
V : 2V/div. H : 50 μsec/div.
(41) **Lower : Q210 Collector**
V : 200V/div. H : 50 μsec/div.



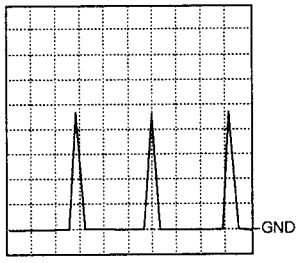
(18) **Upper : Q108 Base**
V : 1V/div. H : 5 μsec/div.
(19) **Lower : Q107 Collector**
V : 0.5V/div. H : 5 μsec/div.



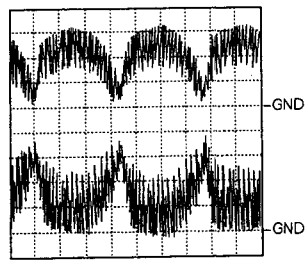
(28) **Upper : Q202 Base**
V : 5V/div. H : 20 μsec/div.
(29) **Lower : D203 Anode**
V : 2V/div. H : 20 μsec/div.



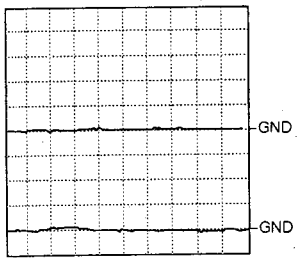
(36) **Q208 Collector**
V : 200V/div. H : 20 μsec/div.



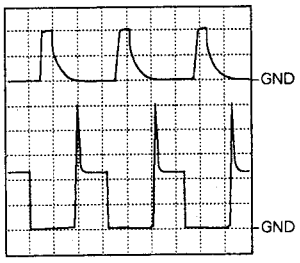
(40) **Between R246 and R247**
V : 2V/div. H : 5msec/div.
(41) **Lower : Q210 Collector**
V : 200V/div. H : 5msec/div.



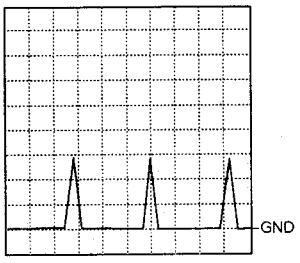
(20) **Upper : D124 Anode**
V : 1V/div. H : 5 μsec/div.
(21) **Lower : D116 Anode**
V : 0.5V/div. H : 5 μsec/div.



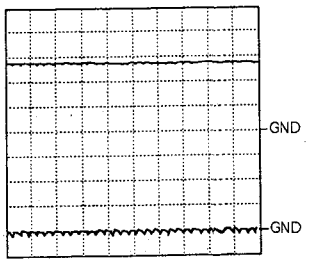
(30) **Upper : D201 Anode**
V : 20V/div. H : 20 μsec/div.
(31) **Lower : Q204 Collector**
V : 20V/div. H : 20 μsec/div.



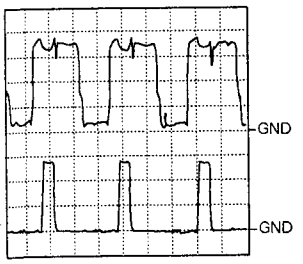
(37) **D221 Cathode**
V : 200V/div. H : 20 μsec/div.



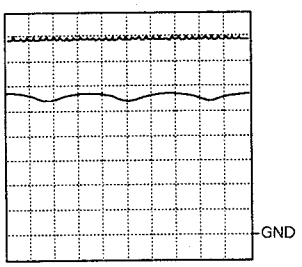
(42) **Upper : C321 + side**
V : 10V/div. H : 20 μsec/div.
(43) **Lower : D311 Anode**
V : 1V/div. H : 20 μsec/div.



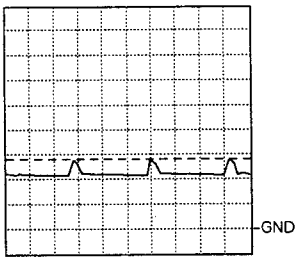
(22) **Upper : Q204 Base**
V : 0.2V/div. H : 20 μsec/div.
(23) **Lower : TP202 (H. BLK)**
V : 5V/div. H : 20 μsec/div.



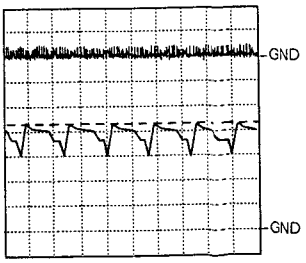
(32) **Upper : D213 Anode**
V : 1V/div. H : 5msec/div.
(33) **Lower : Q207 Base**
V : 20V/div. H : 5msec/div.



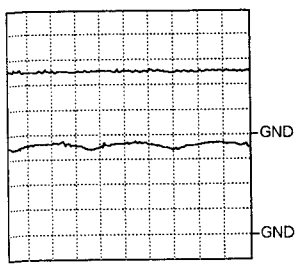
(38) **D220 Cathode**
V : 200V/div. H : 20 μsec/div.



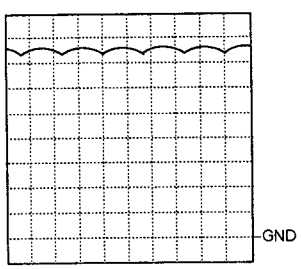
(44) **Upper : D312 Anode**
V : 0.5V/div. H : 2msec/div.
(45) **Lower : Q304 Collector**
V : 20V/div. H : 2msec/div.



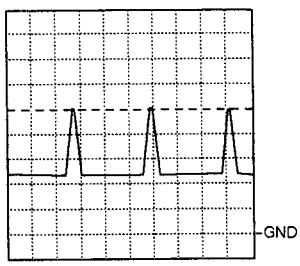
(24) **Upper : Foot of R206**
V : 2V/div. H : 5msec/div.
(25) **Lower : Between R202 and R204**
V : 2V/div. H : 5msec/div.



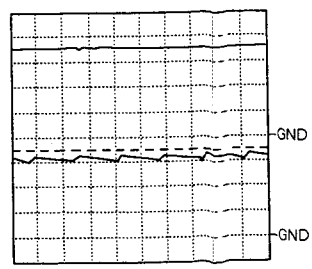
(34) **Q207 Emitter**
V : 20V/div. H : 10msec/div.



(39) **D216 Cathode**
V : 200V/div. H : 20 μsec/div.



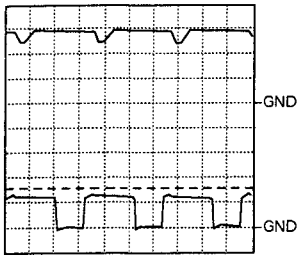
(46) **Upper : D317 Cathode**
V : 2V/div. H : 10msec/div.
(47) **Lower : Q303 Base**
V : 2V/div. H : 10msec/div.



PRO - 119, PRO - 99

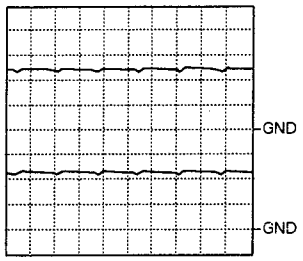
(48) **Upper : C327 + side**
V : 2V/div. H : 20 μsec/div.

(49) **Lower : Q307 Base**
V : 0.5V/div. H : 20 μsec/div.

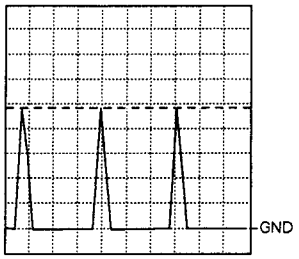


(52) **Upper : Q308 Emitter**
V : 50V/div. H : 10msec/div.

(53) **Lower : Q309 Base**
V : 50V/div. H : 10msec/div.

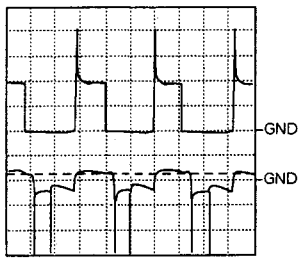


(58) **Q309 Collector**
V : 200V/div. H : 20 μsec/div.



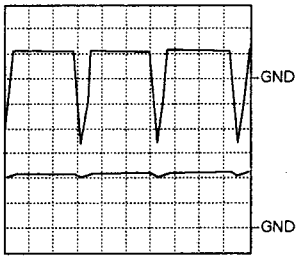
(50) **Upper : Q307 Collector**
V : 20V/div. H : 20 μsec/div.

(51) **Lower : Q308 Base**
V : 2V/div. H : 20 μsec/div.



(54) **Upper : D307 Anode**
V : 200V/div. H : 20 μsec/div.

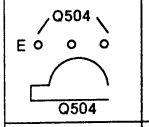
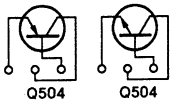
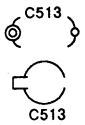
(55) **Lower : Between R342 and C320**
V : 5V/div. H : 20 μsec/div.



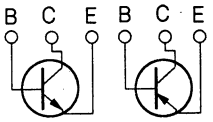
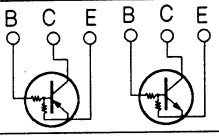
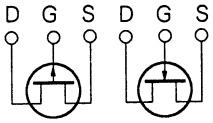
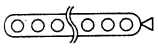
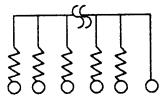
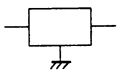
4. PCB CONNECTION DIAGRAMS

NOTE FOR PCB DIAGRAMS:

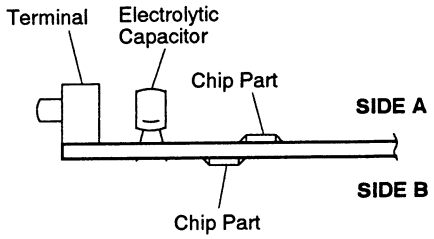
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

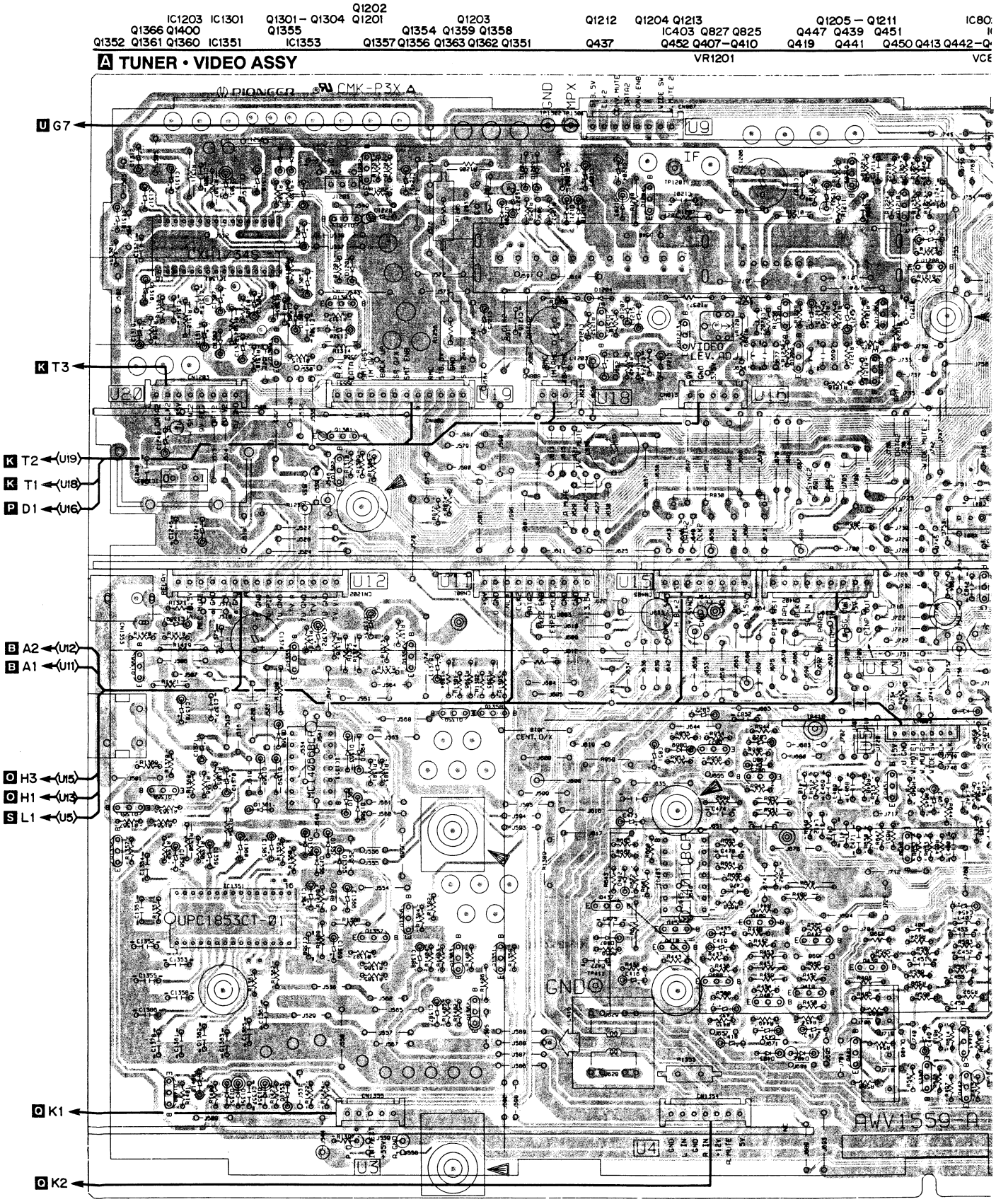
3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊂ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.
6. The parts mounted on each PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

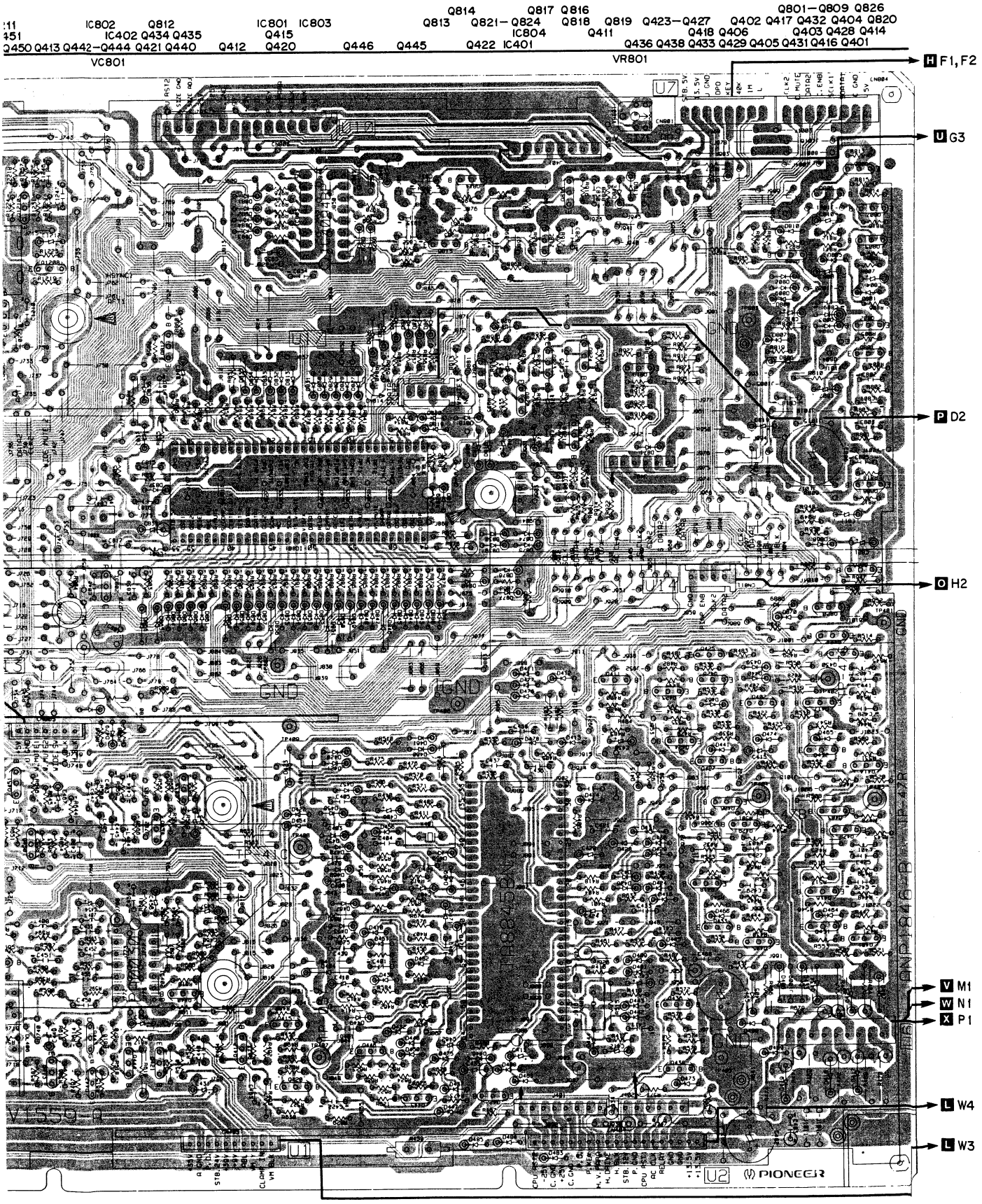
7. PCB diagrams which are indicated as SIDE A and SIDE B are double sided as follows;



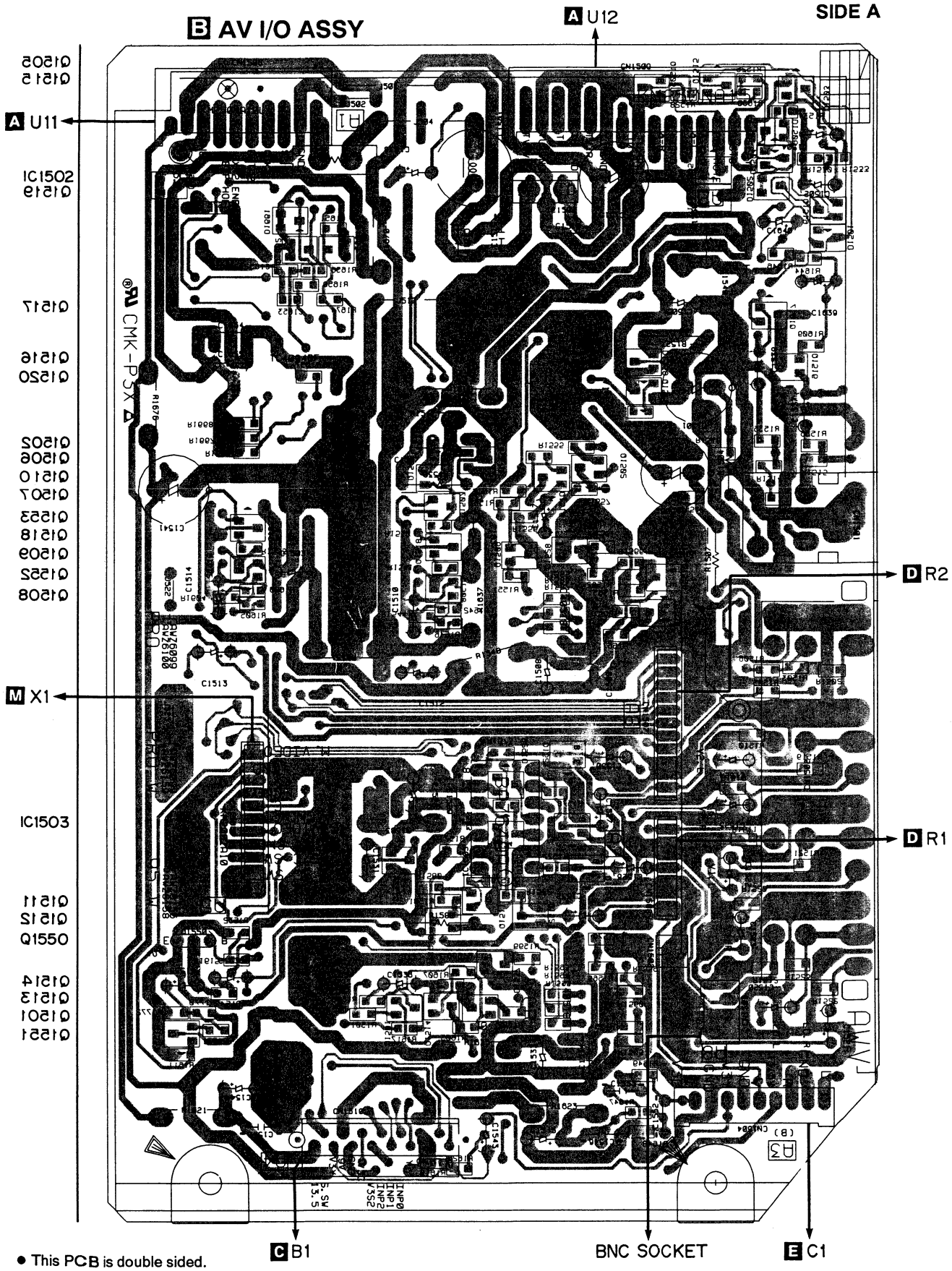
4.1 TUNER • VIDEO ASSY



● This diagram is viewed from the mounted parts side.


Q814 Q817 Q816
Q801–Q809 Q826
IC802 Q812 IC801 IC803 Q813 Q821–Q824 Q818 Q819 Q423–Q427 Q402 Q417 Q432 Q404 Q820
IC402 Q434 Q435 Q415 IC804 Q411 Q418 Q406 Q403 Q428 Q414
Q450 Q413 Q442–Q444 Q421 Q440 Q412 Q420 Q446 Q445 Q422 IC401 Q436 Q438 Q433 Q429 Q405 Q431 Q416 Q401
VC801
VR801
H F1, F2
U G3
P D2
O H2
V M1
W N1
X P1
L W4
L W3
U7
U4
U1
U2
PIONEER

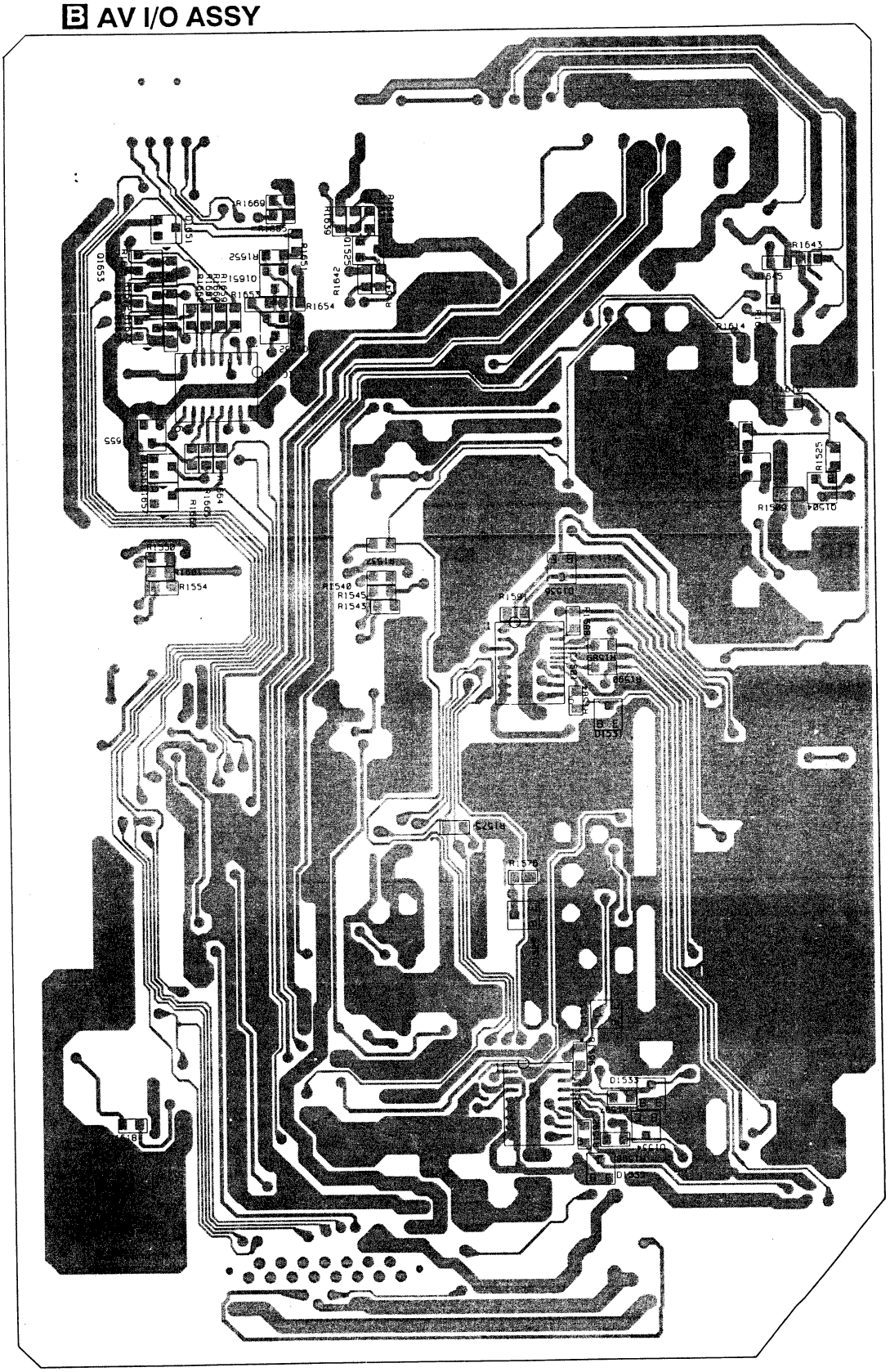
4.2 AV I/O ASSY



- This PCB is double sided.

SIDE B

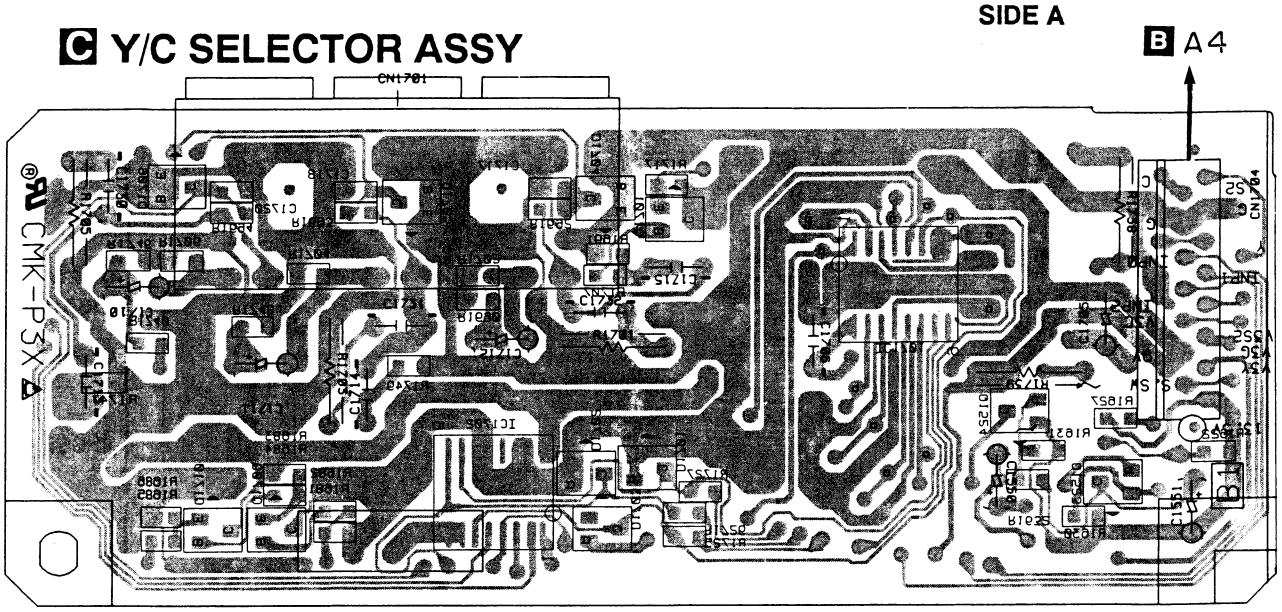
B AV I/O ASSY



● This PCB is double sided.

4.3 Y/C SELECTOR ASSY

SIDE A

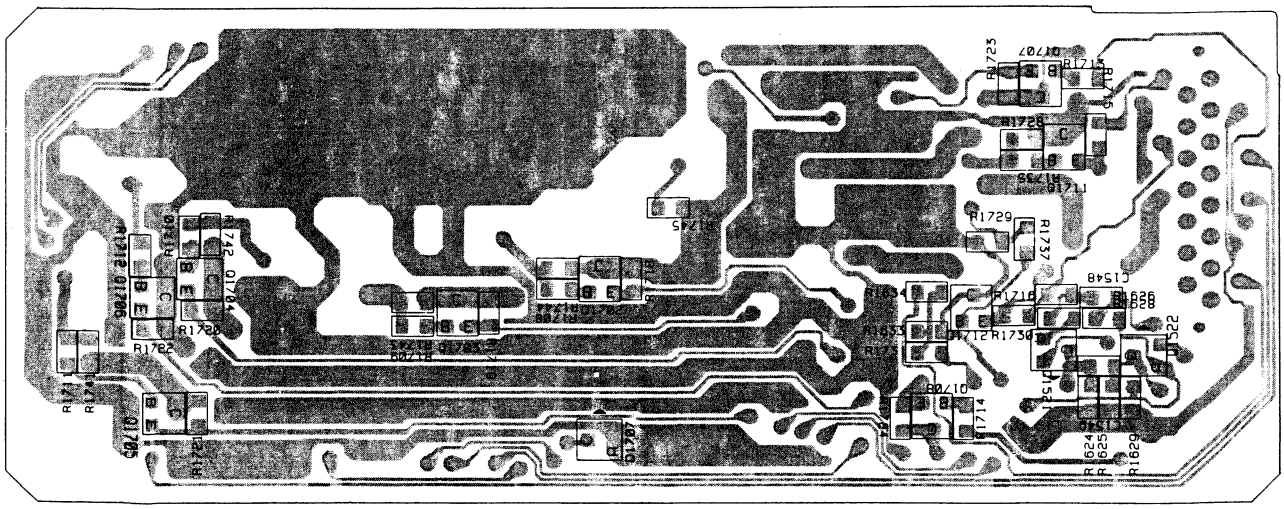


Q1709 Q1710 IC1702 Q1701 IC1701 Q1524 Q1523

(ANP1847-B)

● This PCB is double sided.

SIDE B

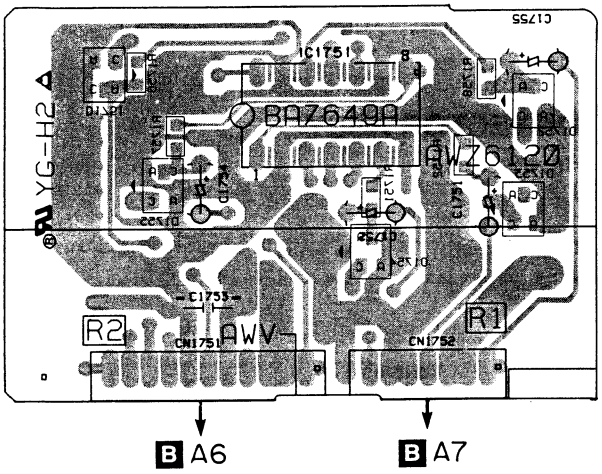


Q1704–Q1706 Q1703 Q1702 Q1707 Q1711 Q1708 Q1712 Q1521 Q1522

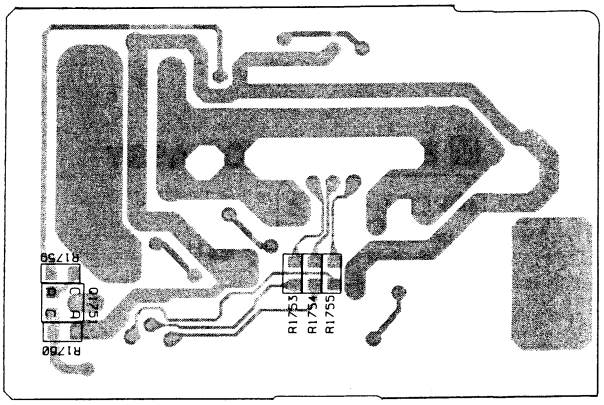
4.4 P IN P SELECTOR AND FRONT INPUT ASSEMBLIES

D P IN P SELECTOR ASSY

SIDE A



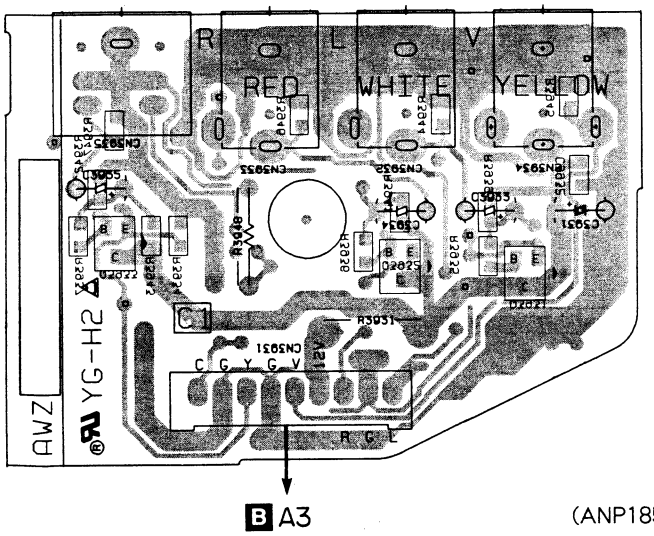
SIDE B



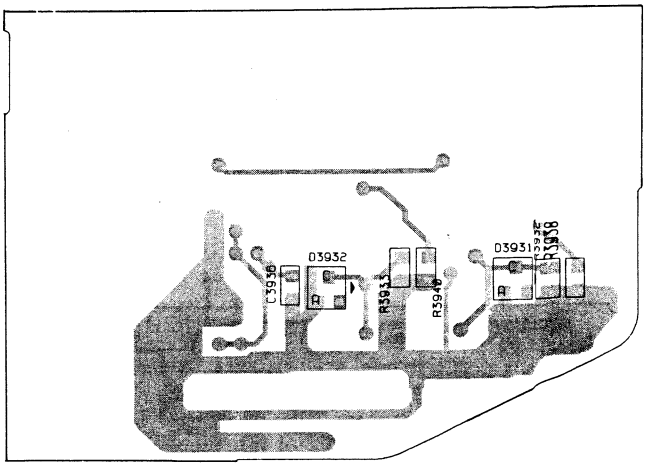
(ANP1851-B)

E FRONT INPUT ASSY

SIDE A



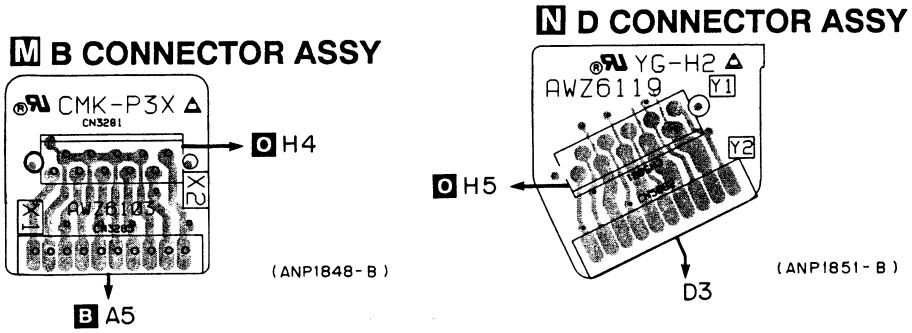
SIDE B

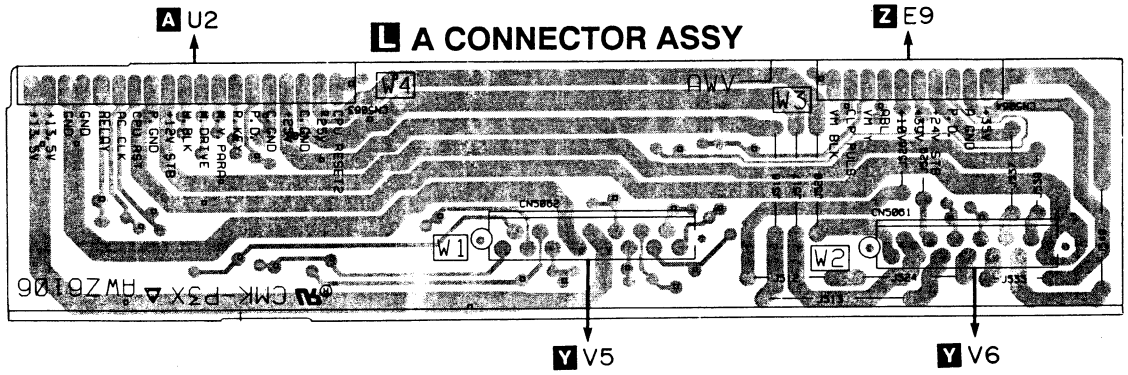


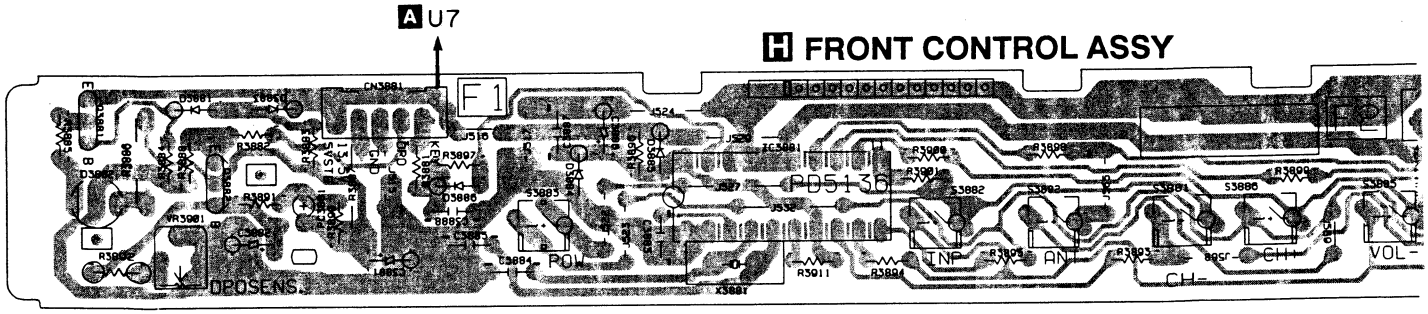
(ANP1851-B)

● This PCB is double sided.

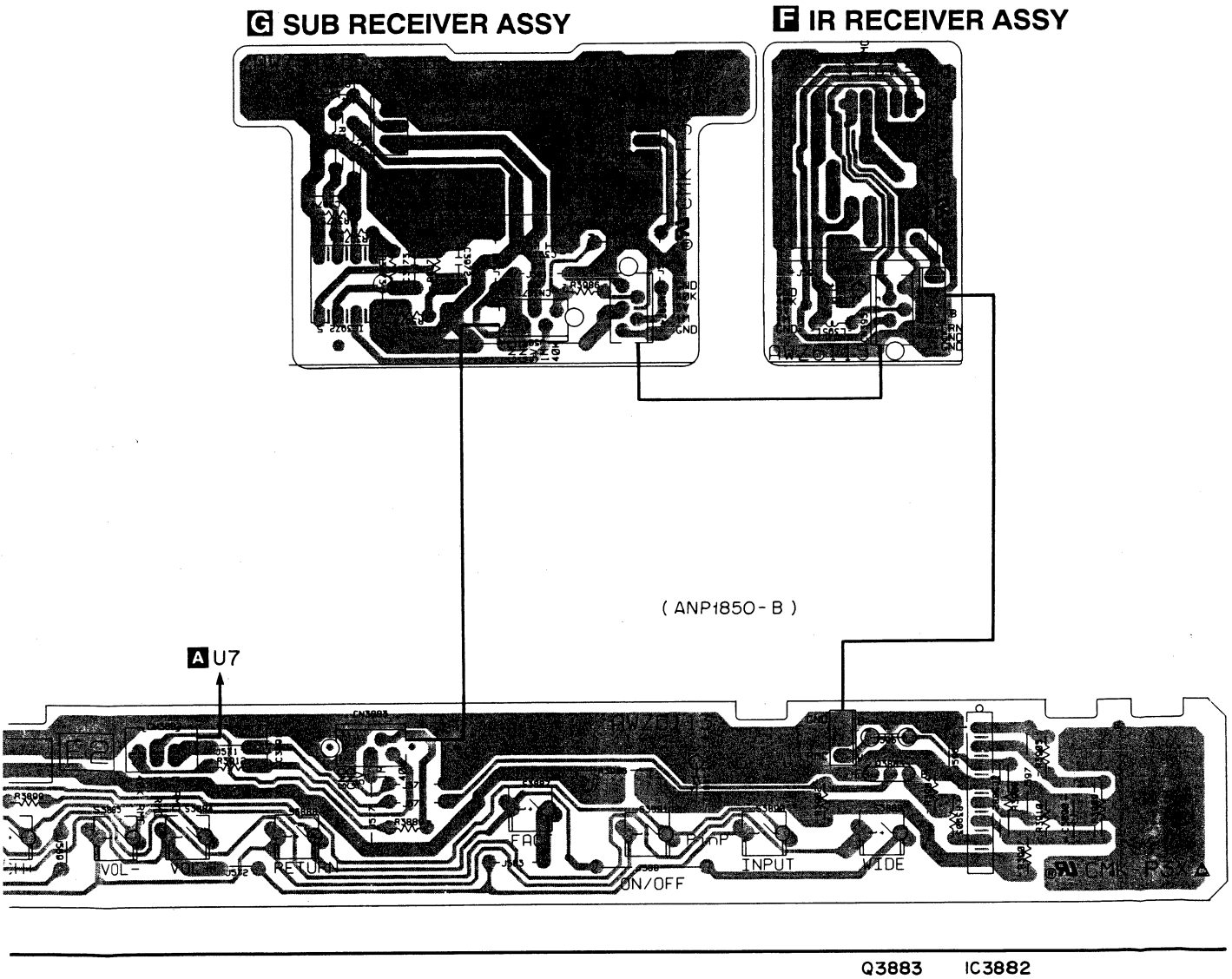
4.5 A, B AND D CONNECTOR, IR RECEIVER, SUB RECEIVER AND FRONT CONTROL ASSEMBLIES



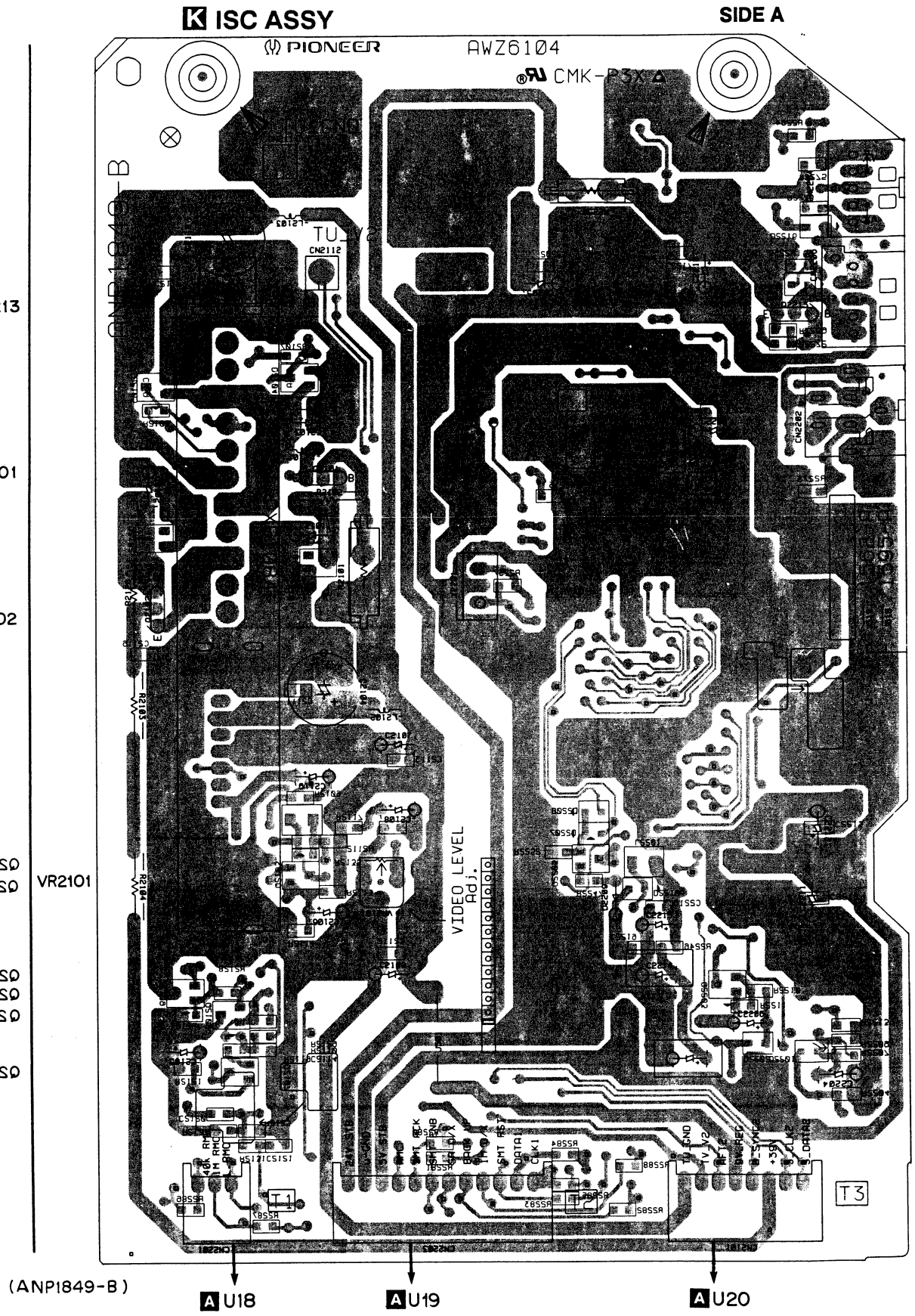




● This diagram is viewed from the mounted parts side.


G SUB RECEIVER ASSY
F IR RECEIVER ASSY
(ANP1850-B)
A U7
VOL-
RETURN
INPUT
ON/OFF
Q3883
IC3882

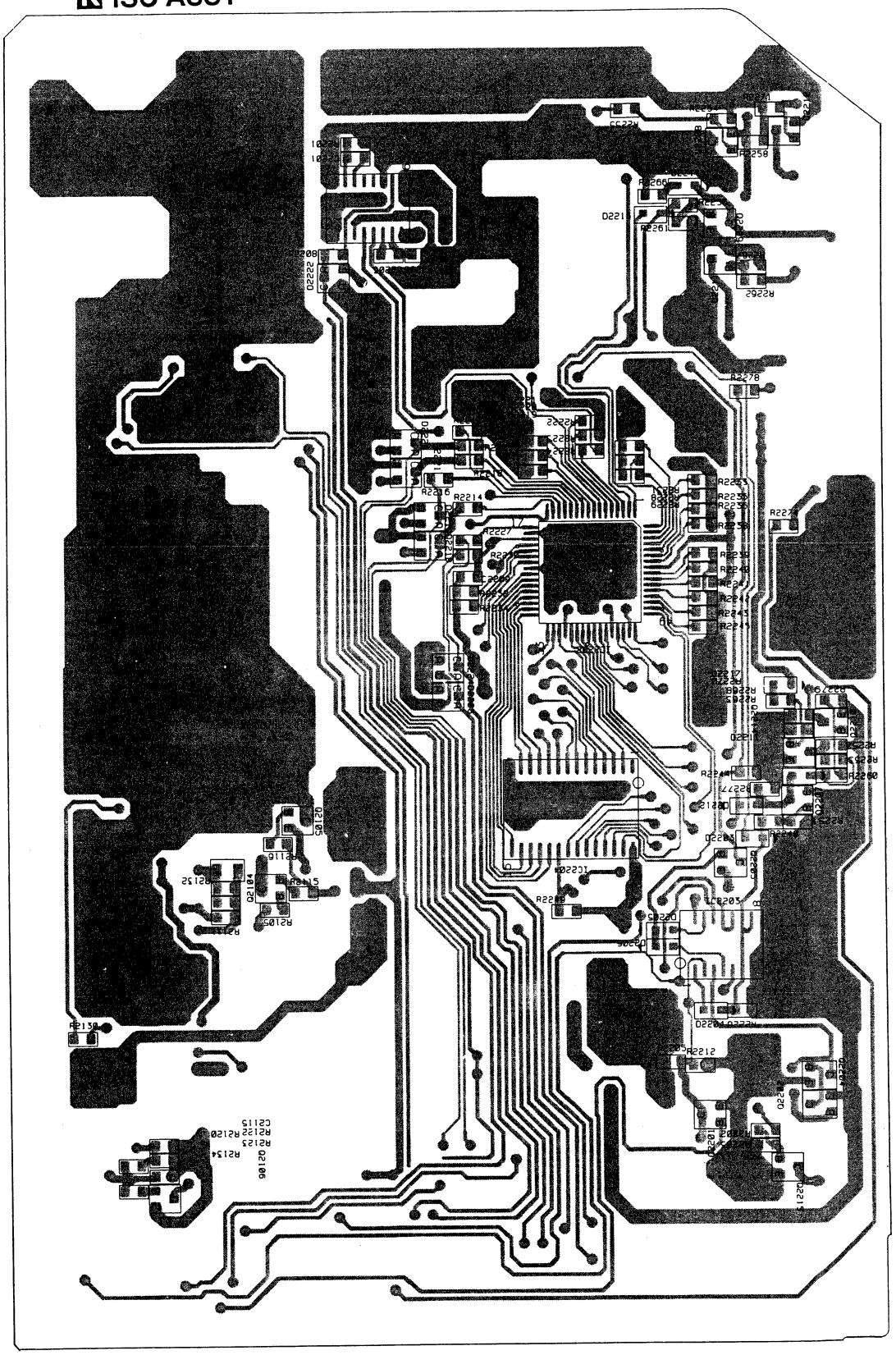
4.6 ISC ASSY



● This PCB is double sided.

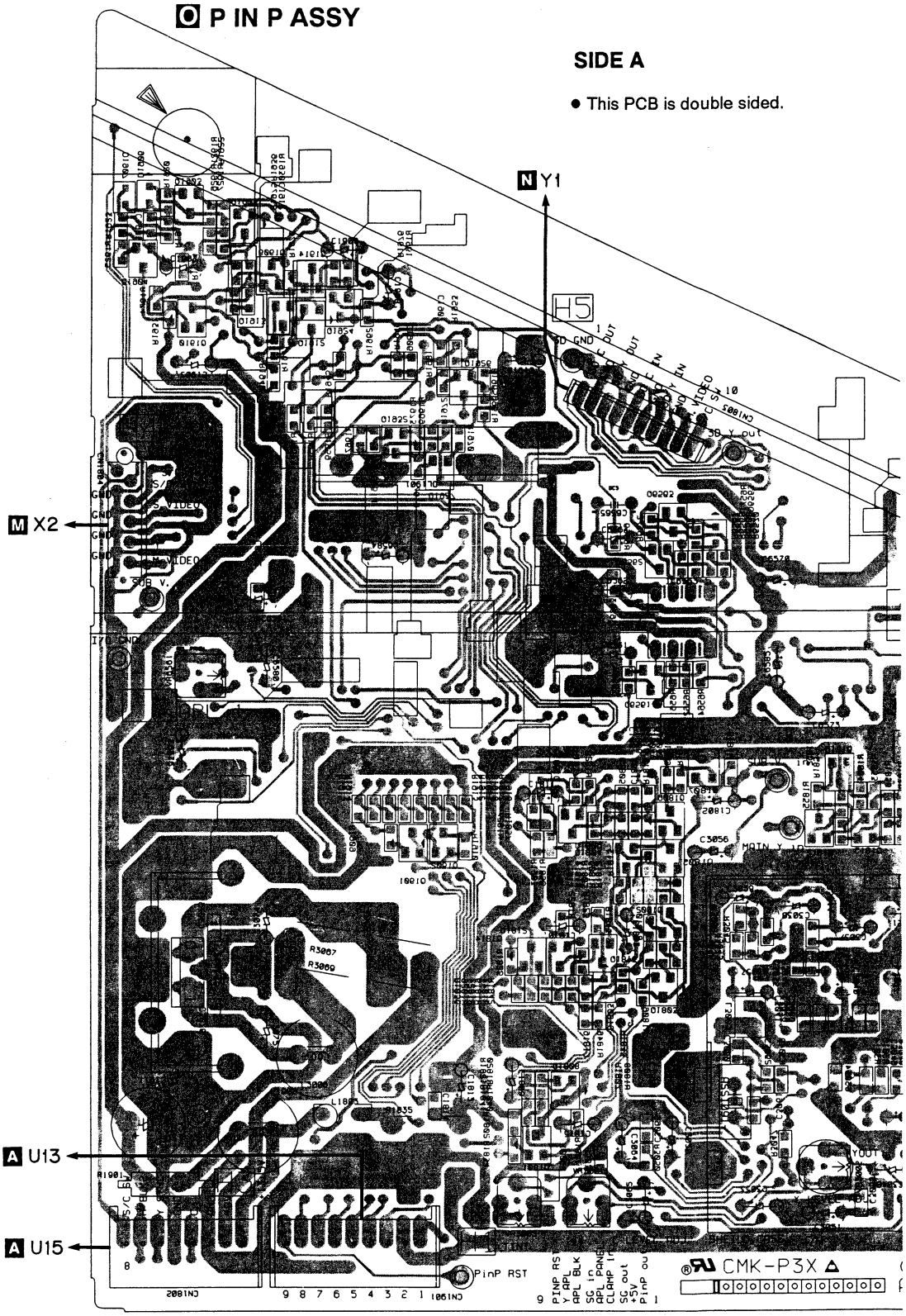
K ISC ASSY

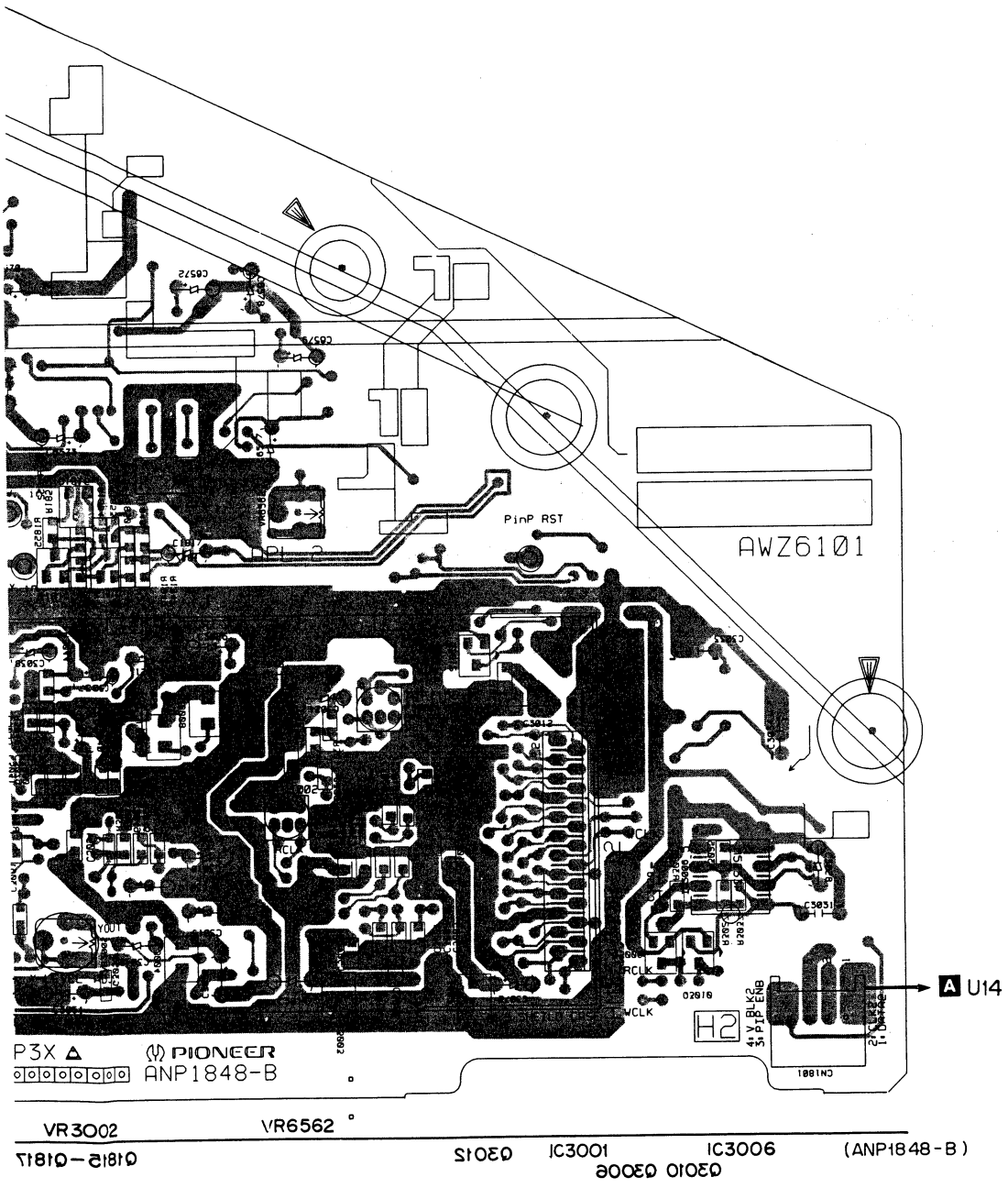
SIDE B



● This PCB is double sided.

4.7 P IN P ASSY

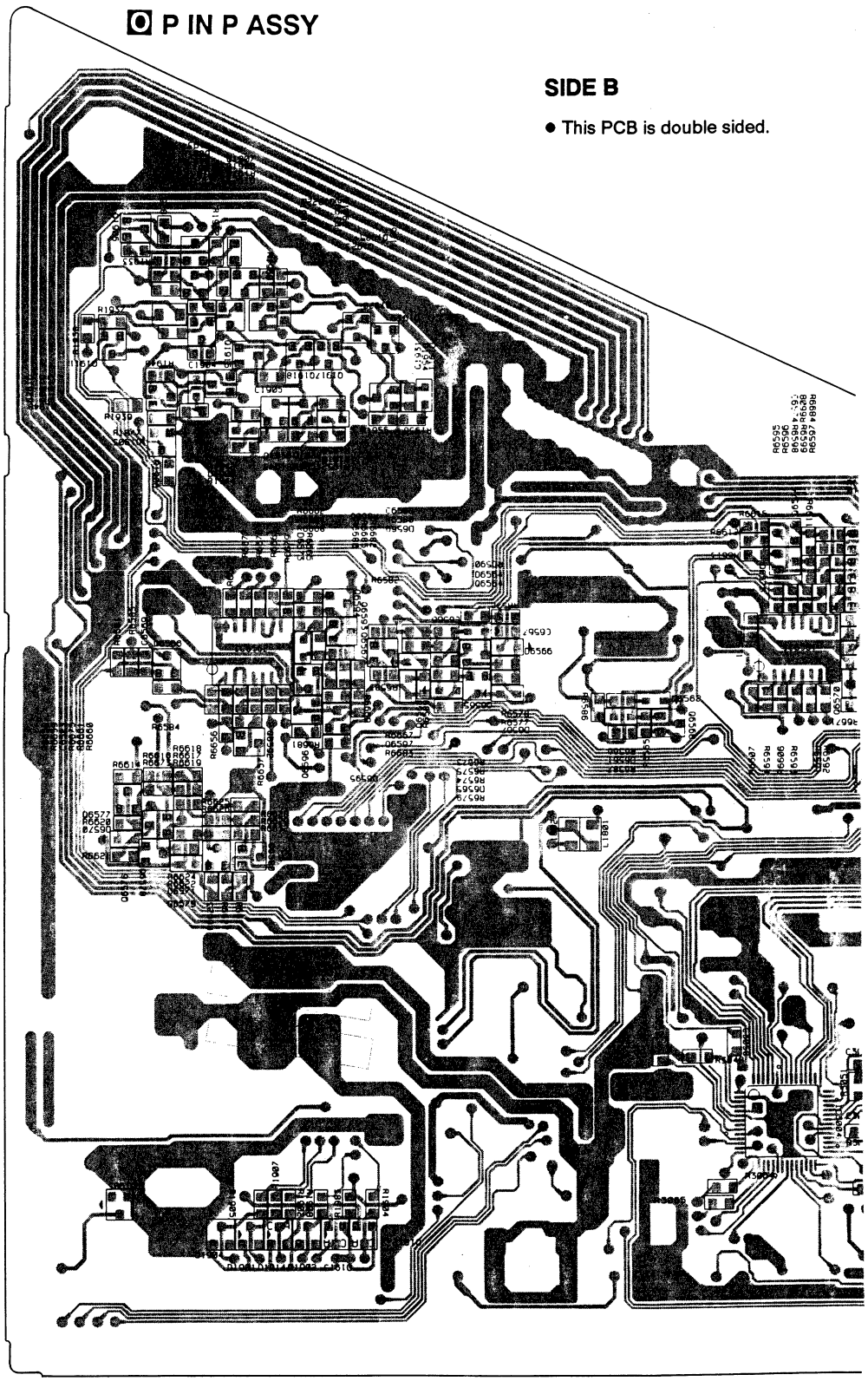

O P IN P ASSY
SIDE A
• This PCB is double sided.
N Y1
M X2
A U13
A U15
H5
CMK-P3X Δ
VR6561
VR3003 VR3001
VR3002
IC6563
IC3005


AWZ6101
PinP RST
A U14
P3X △
PIONEER
ANP1848-B
VR3002
VR6562
IC3001
IC3006
(ANP1848-B)

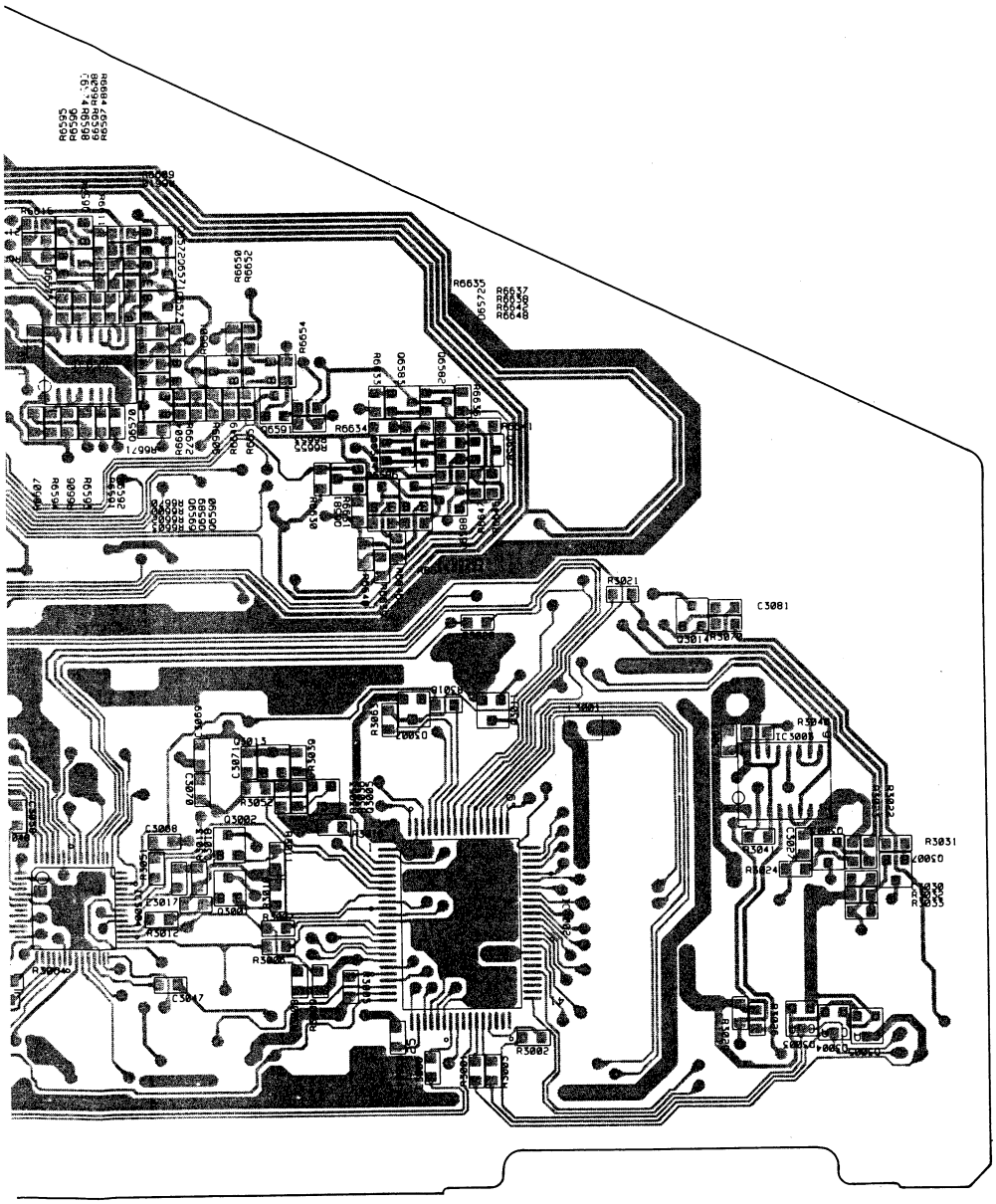
P IN P ASSY

SIDE B

- This PCB is double sided.



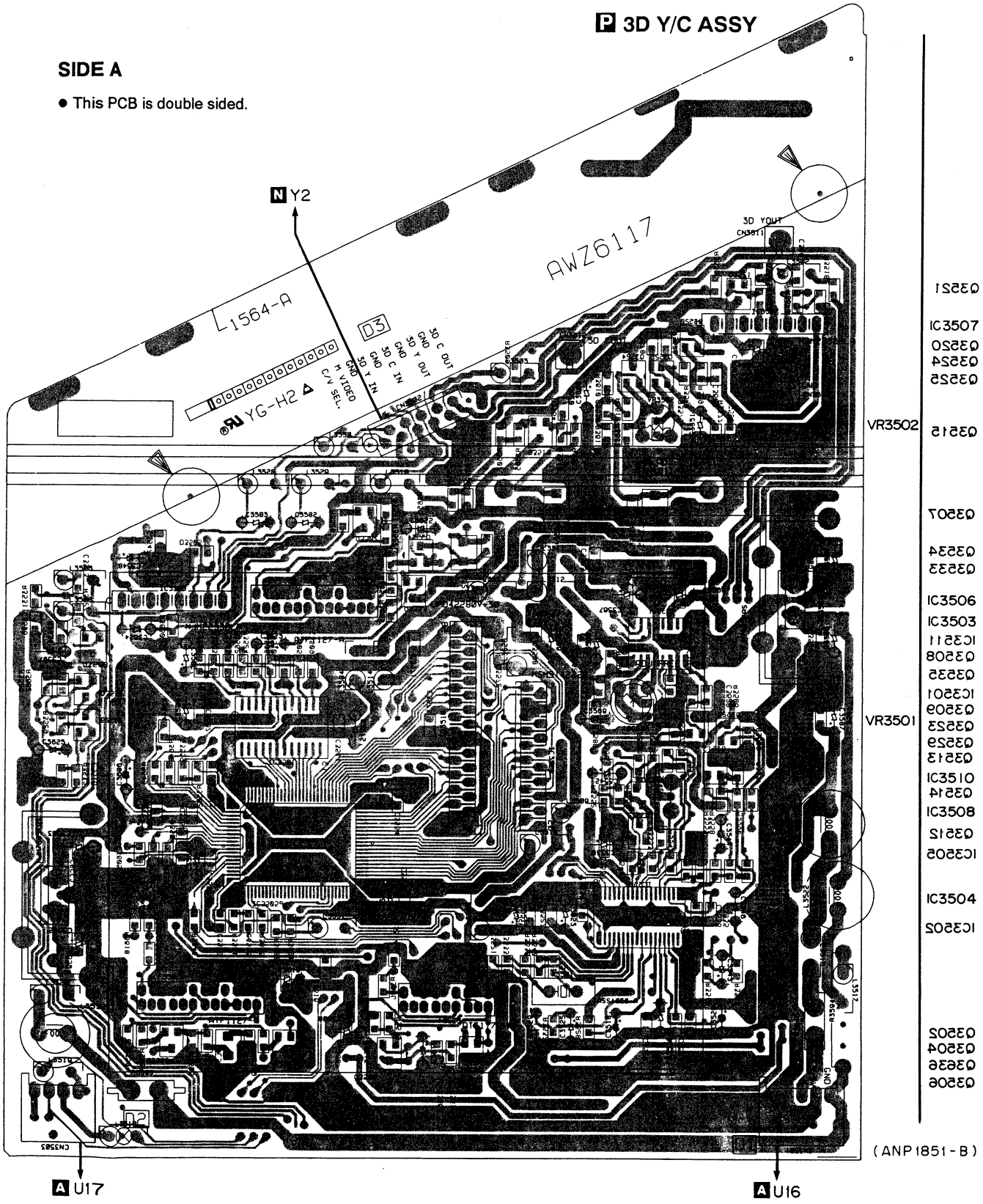
Q1911 Q1906–Q1908 Q1921–Q1923 Q6570 – Q6
Q1929 Q1925 Q1915–Q1920 Q6568 IC6561
Q6566 IC6562 Q1930 Q1928 Q1931 Q6564 IC3004
Q6576–Q6580 Q6592–Q6597 Q6567 Q6565



Q6570 – Q6575
IC6561 Q6569 Q6589–Q6591 Q6581– Q6588
IC3004 Q3002 Q3013 Q3005 IC3002 Q3011
Q3001

Q3014 IC3003
Q3003 Q3007

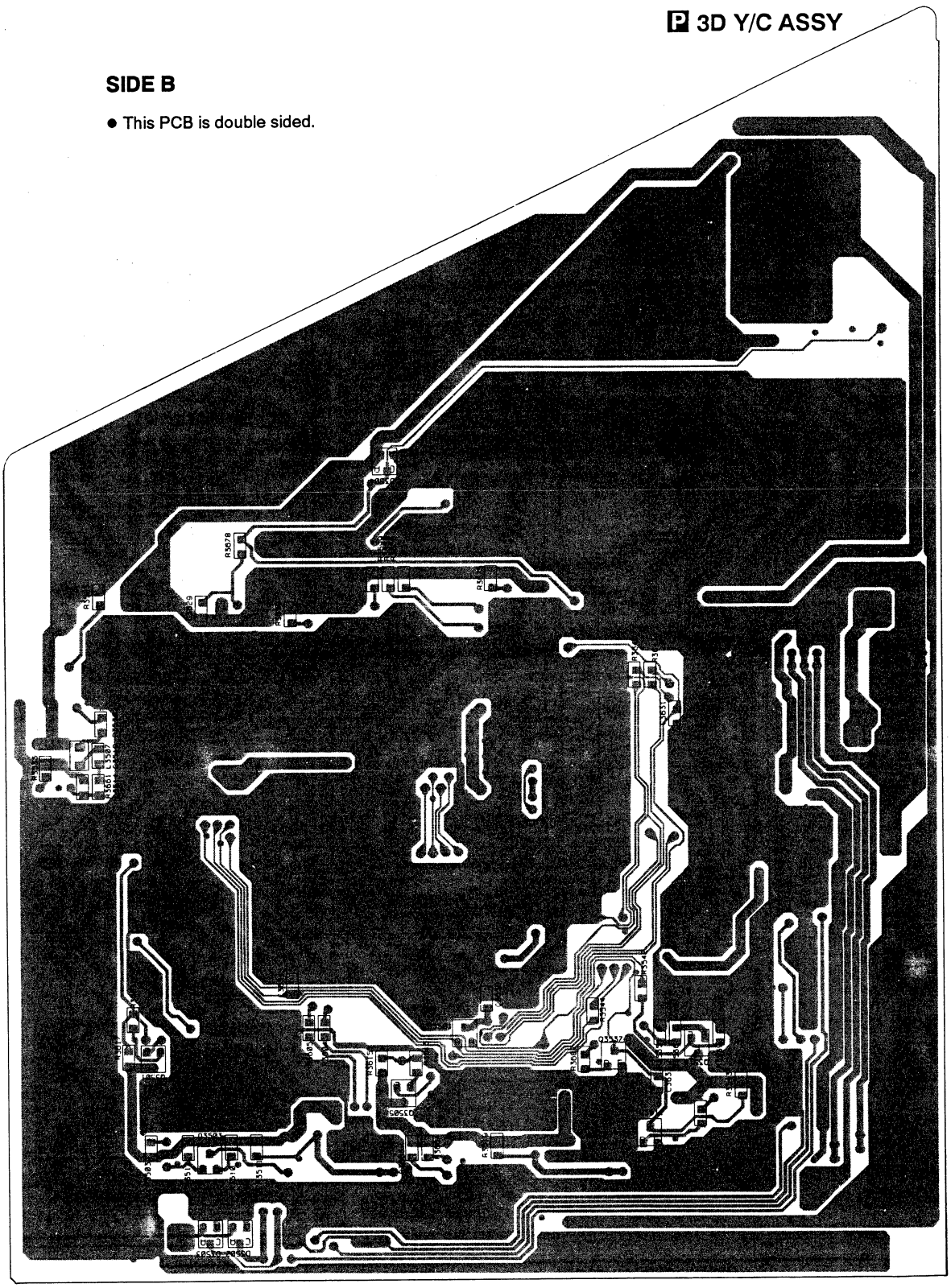
4.8 3D Y/C ASSY


P 3D Y/C ASSY
SIDE A
● This PCB is double sided.
N Y2
AWZ6117
L1564-A
D3
YG-H2
3D C OUT
GND
3D Y OUT
GND
3D C IN
GND
3D Y IN
H VIDEO
C/V SEL.
GND
3D YOUT
CN3811
VR3502
VR3501
IC3507
IC3506
IC3503
IC3504
IC3510
IC3508
IC3505
IC3502
A U17
A U16
(ANP1851-B)

P 3D Y/C ASSY

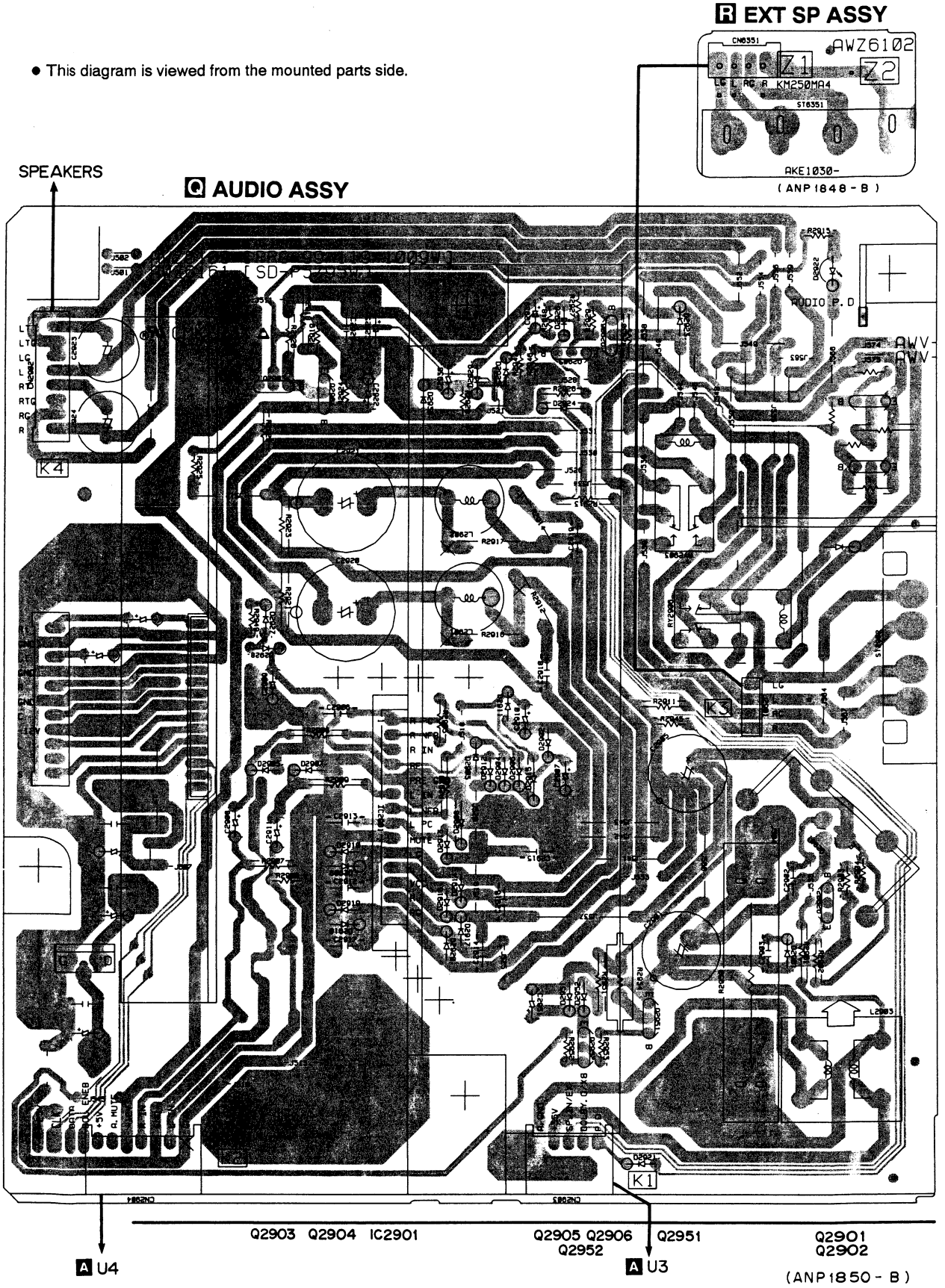
SIDE B

- This PCB is double sided.



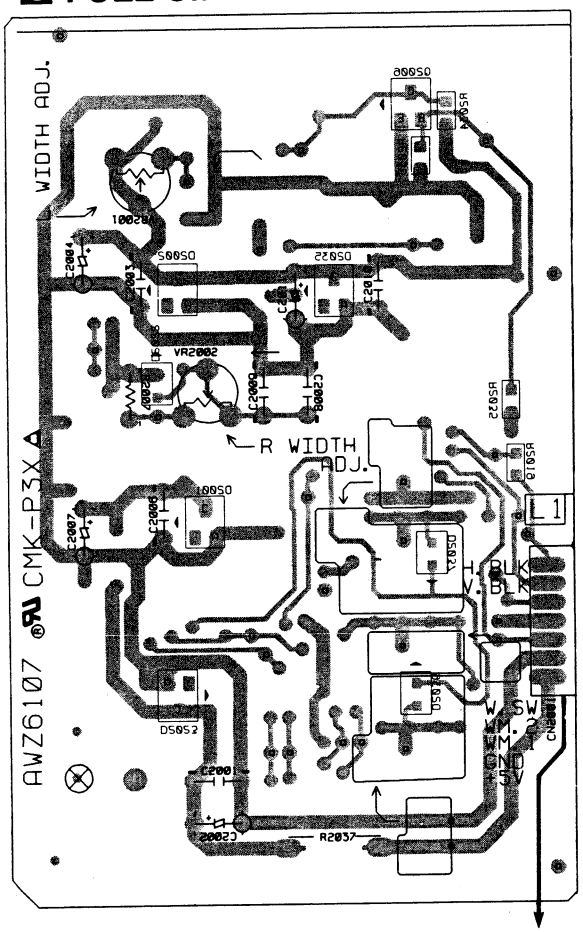
4.9 AUDIO AND EXT SP ASSY

● This diagram is viewed from the mounted parts side.



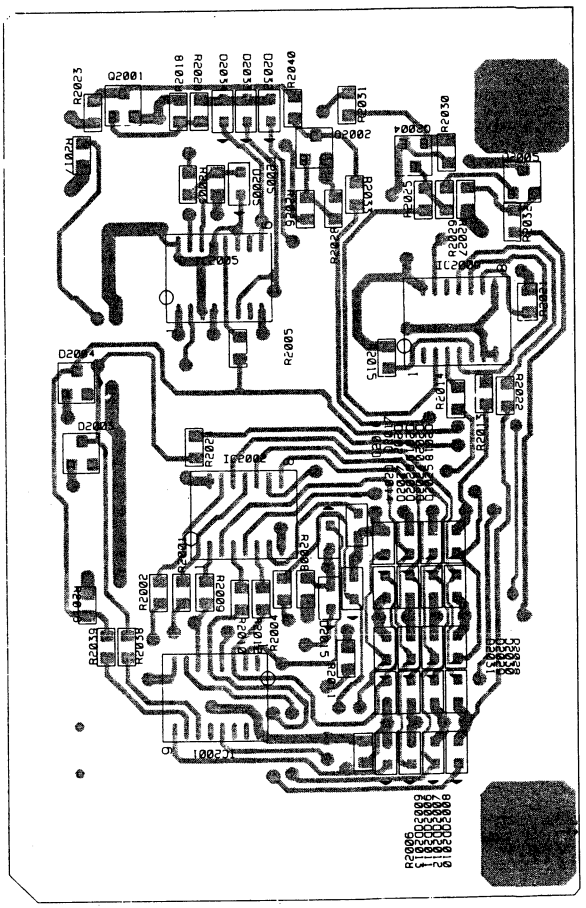
4.10 FULL CINEMA MUTE AND FULL CINEMA CONVER ASSY

S FULL CINEMA MUTE ASSY



SIDE A

A U5

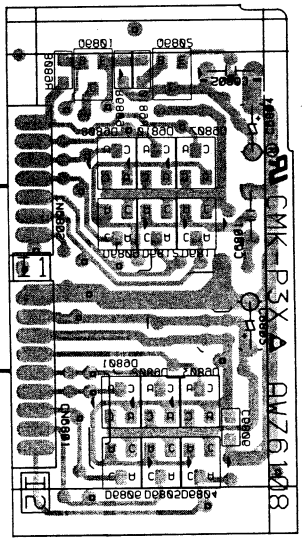


SIDE B

Q2001 IC2005 IC2002 Q2002 Q2004 Q2005
IC2001 IC2009

(ANP1849-B)

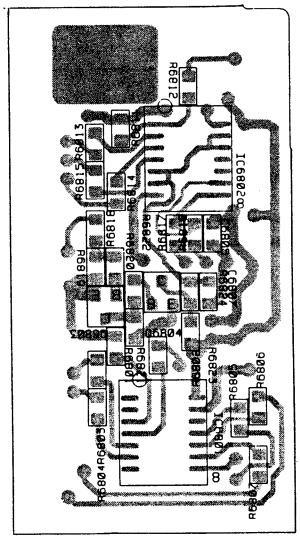
T FULL CINEMA CONVER ASSY



U G2

U G1

SIDE A

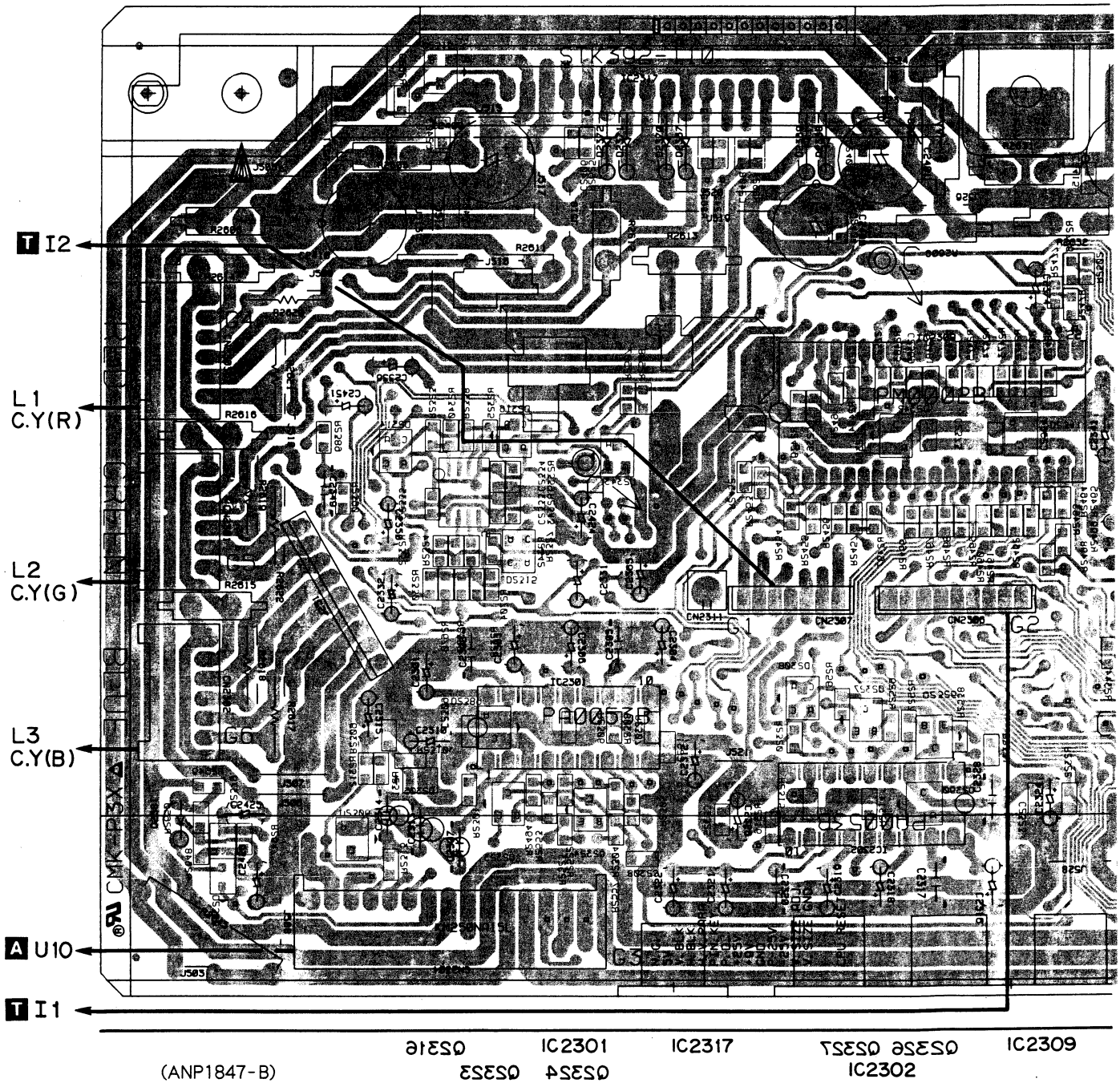


SIDE B

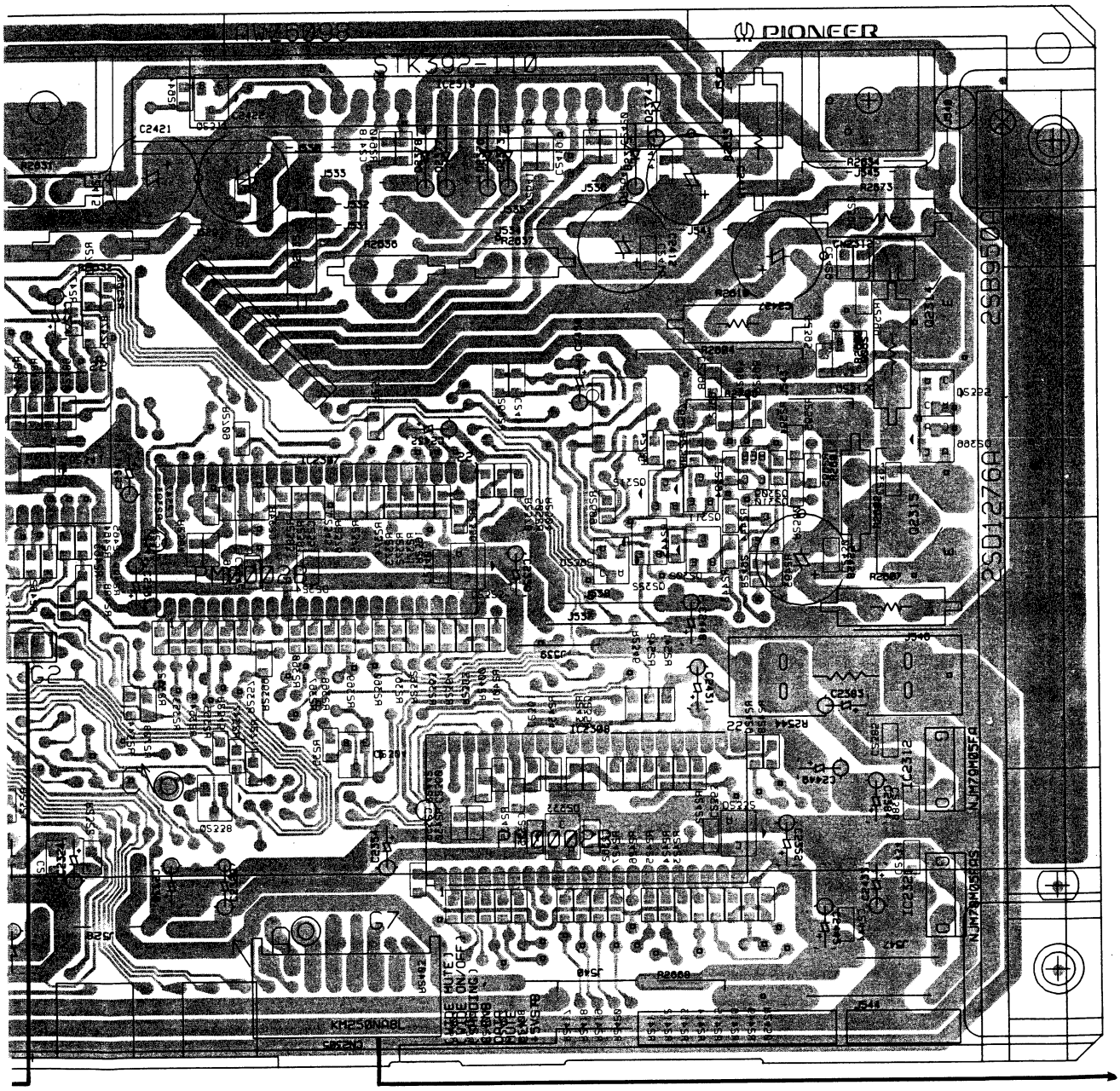
● This PCB is double sided

4.11 CONVERGENCE ASSY

SIDE A



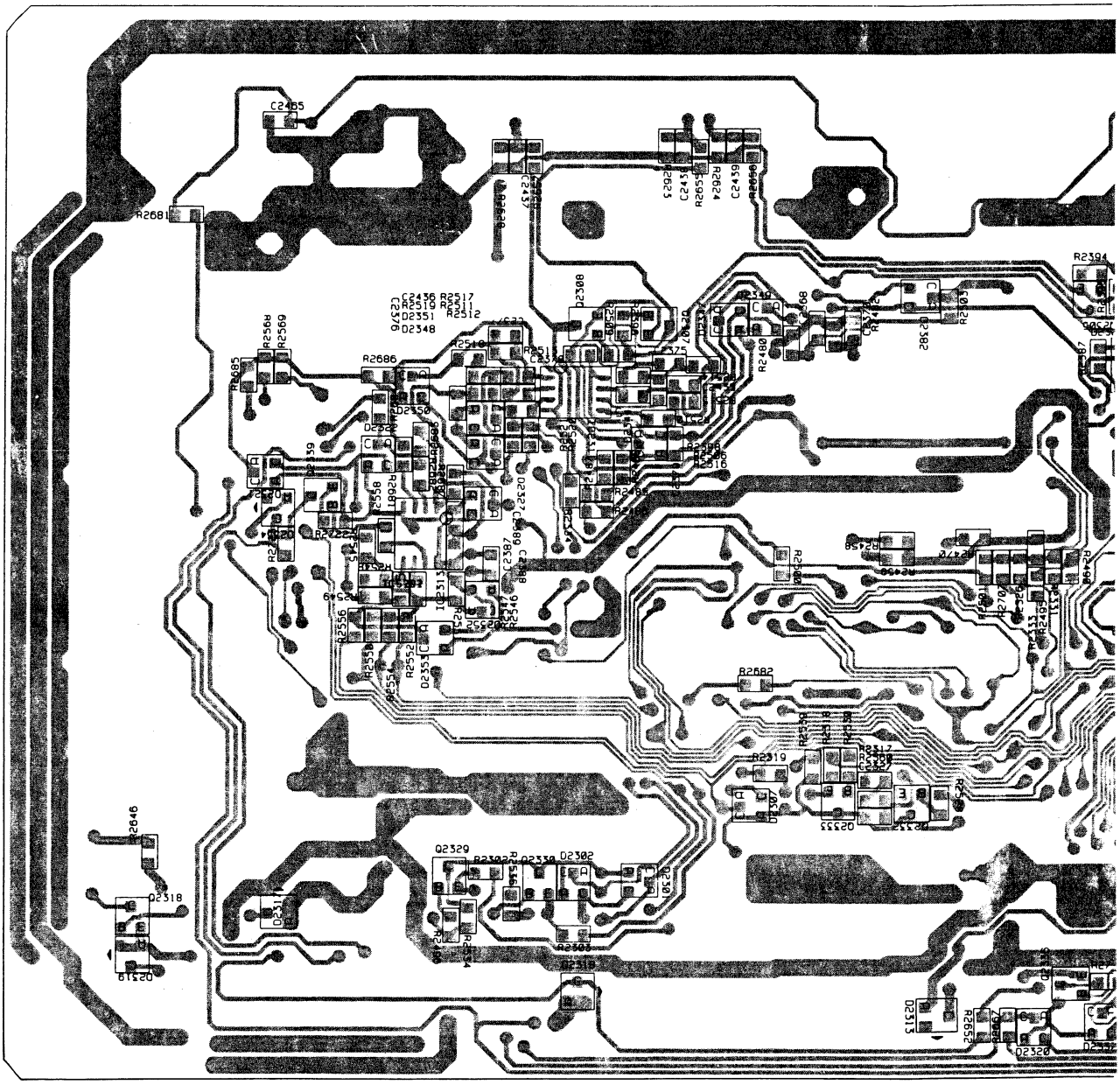
• This PCB is double sided.



IC2309 Q2317 IC2307 Q2338 Q2304 IC2319 IC2255 Q2315 Q2314 Q2313 Q2309 – Q2312 IC2321 IC2308 Q2305 Q2325

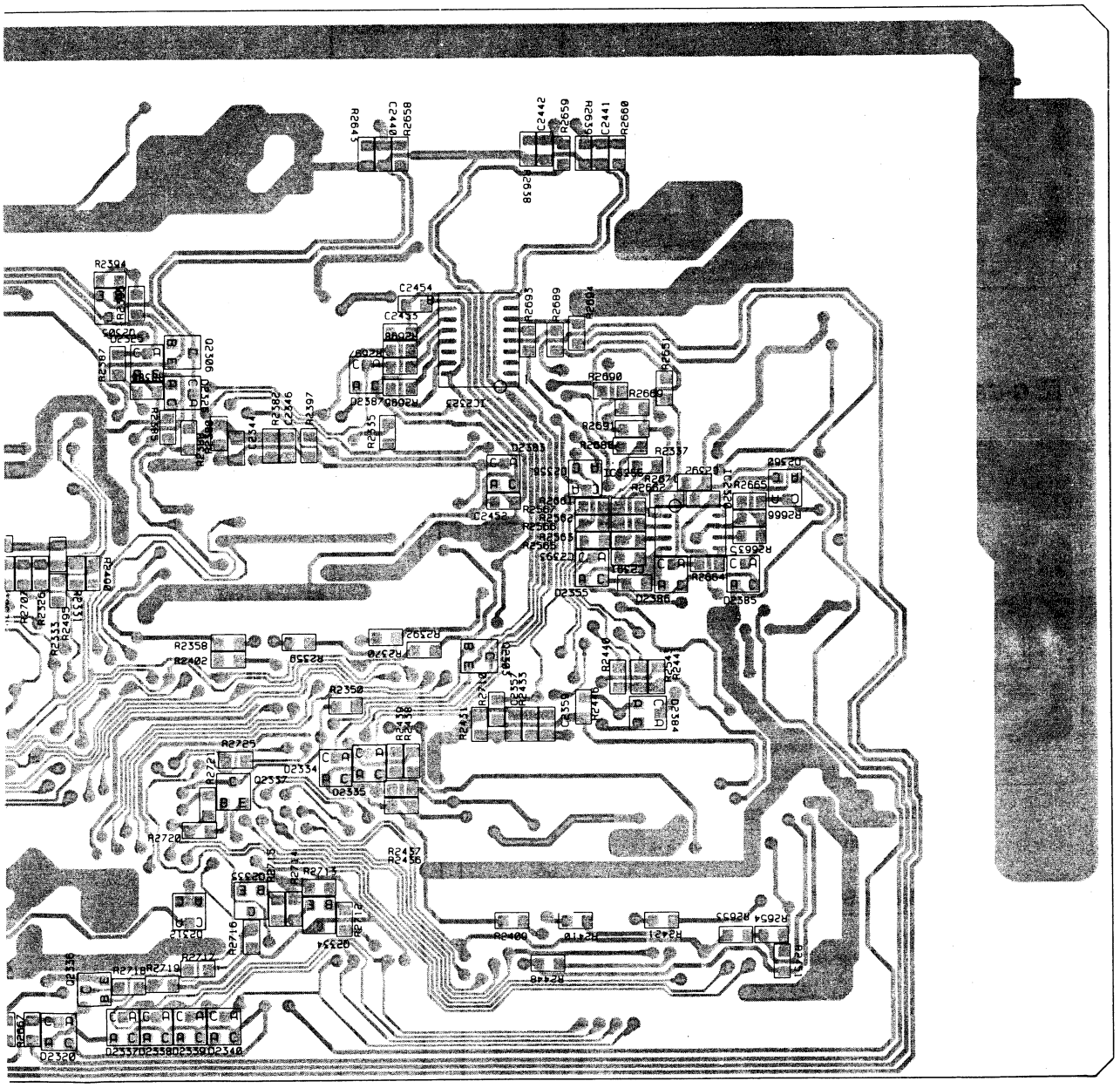
U CONVERGENCE ASSY

SIDE B



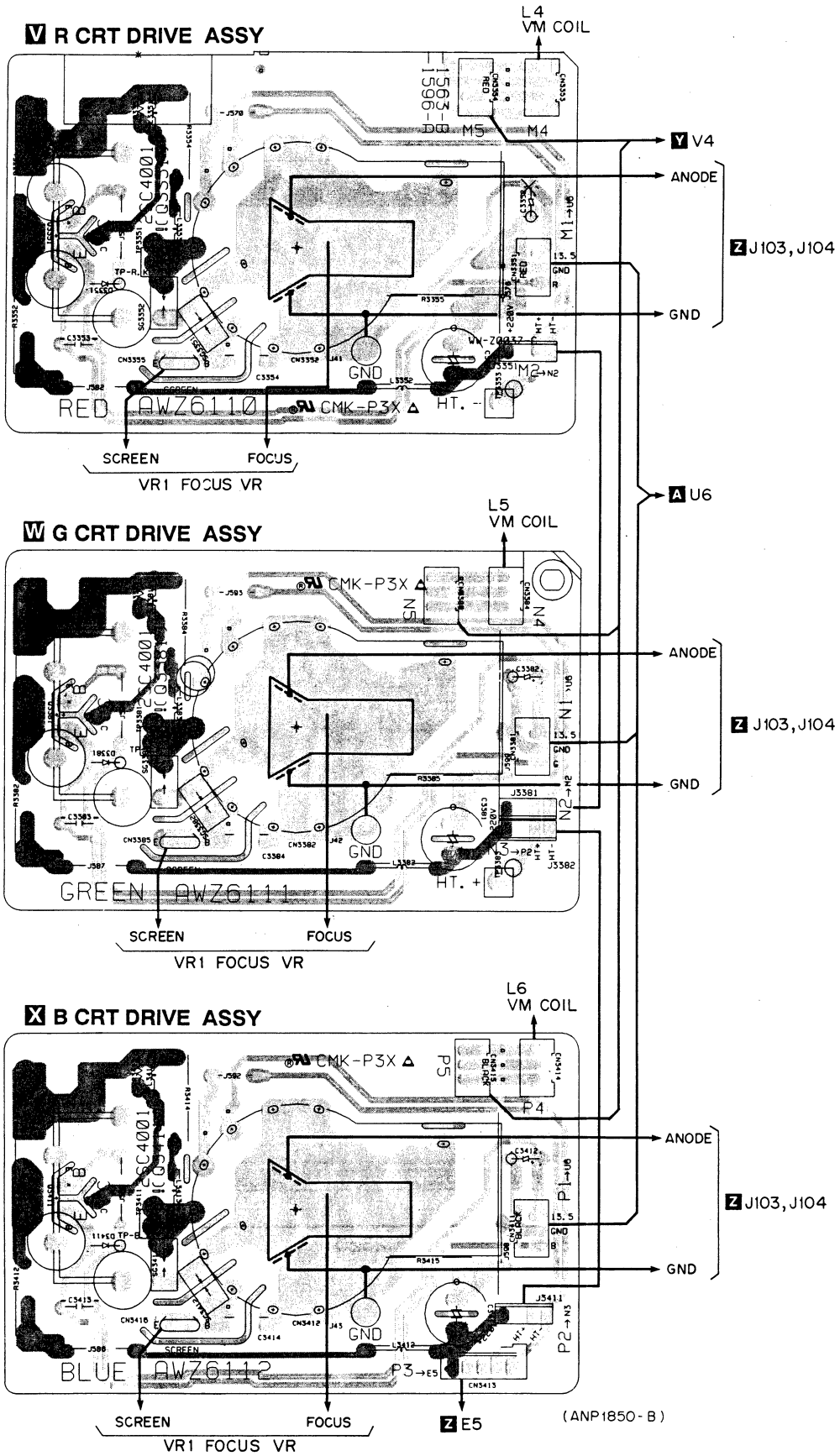
Q2318 Q2339 IC2313 IC2311 Q2308 Q2307 Q2329 Q2330 Q2333 Q2332 Q2336

- This PCB is double sided.



Q2305 Q2306 IC2323 IC2320
Q2336 Q2337 Q2335 Q2334 Q2303

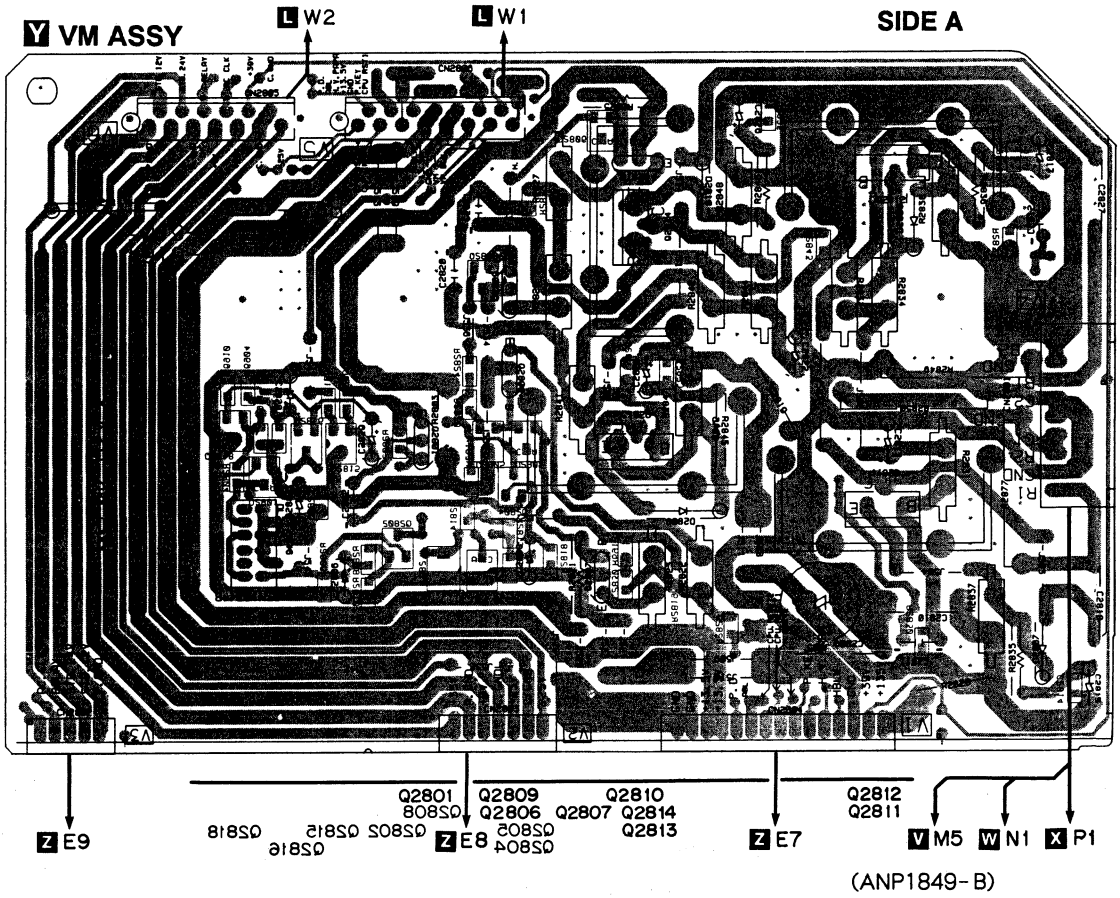
4.12 R, G AND B CRT DRIVE ASSY



● This diagram is viewed from the mounted parts side.

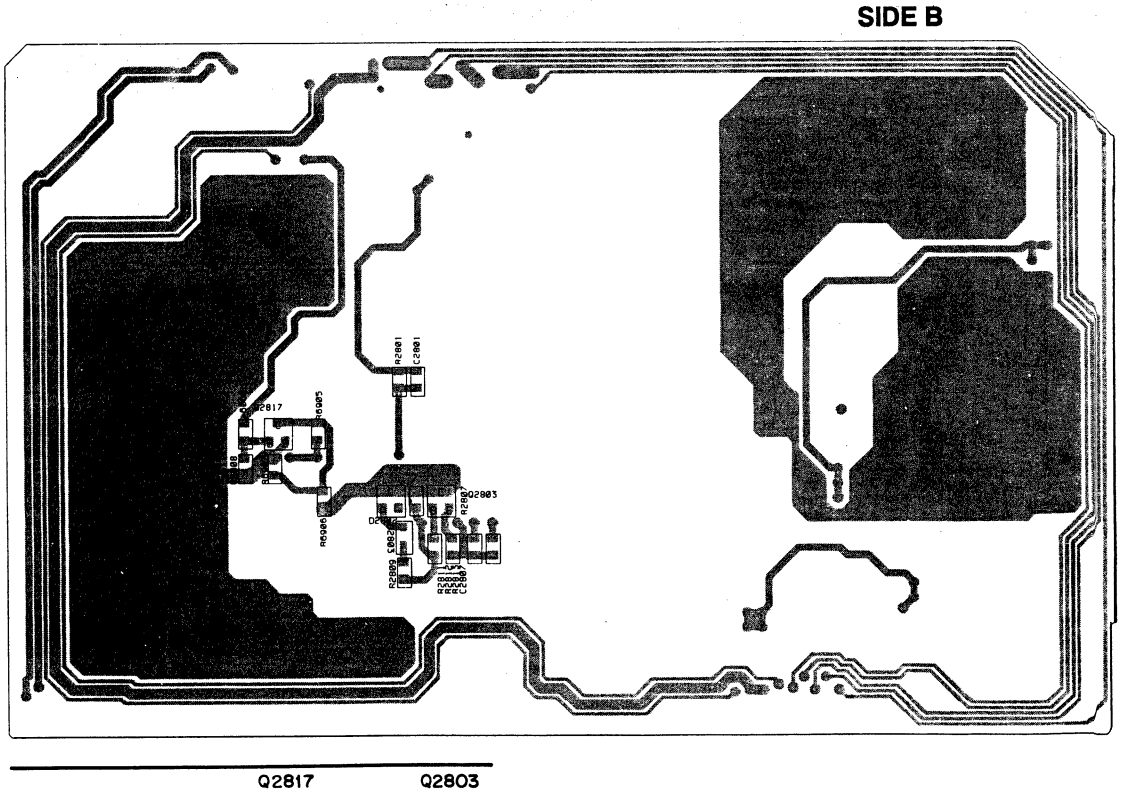
■ mark shows a high voltage generation point

4.13 VM ASSY



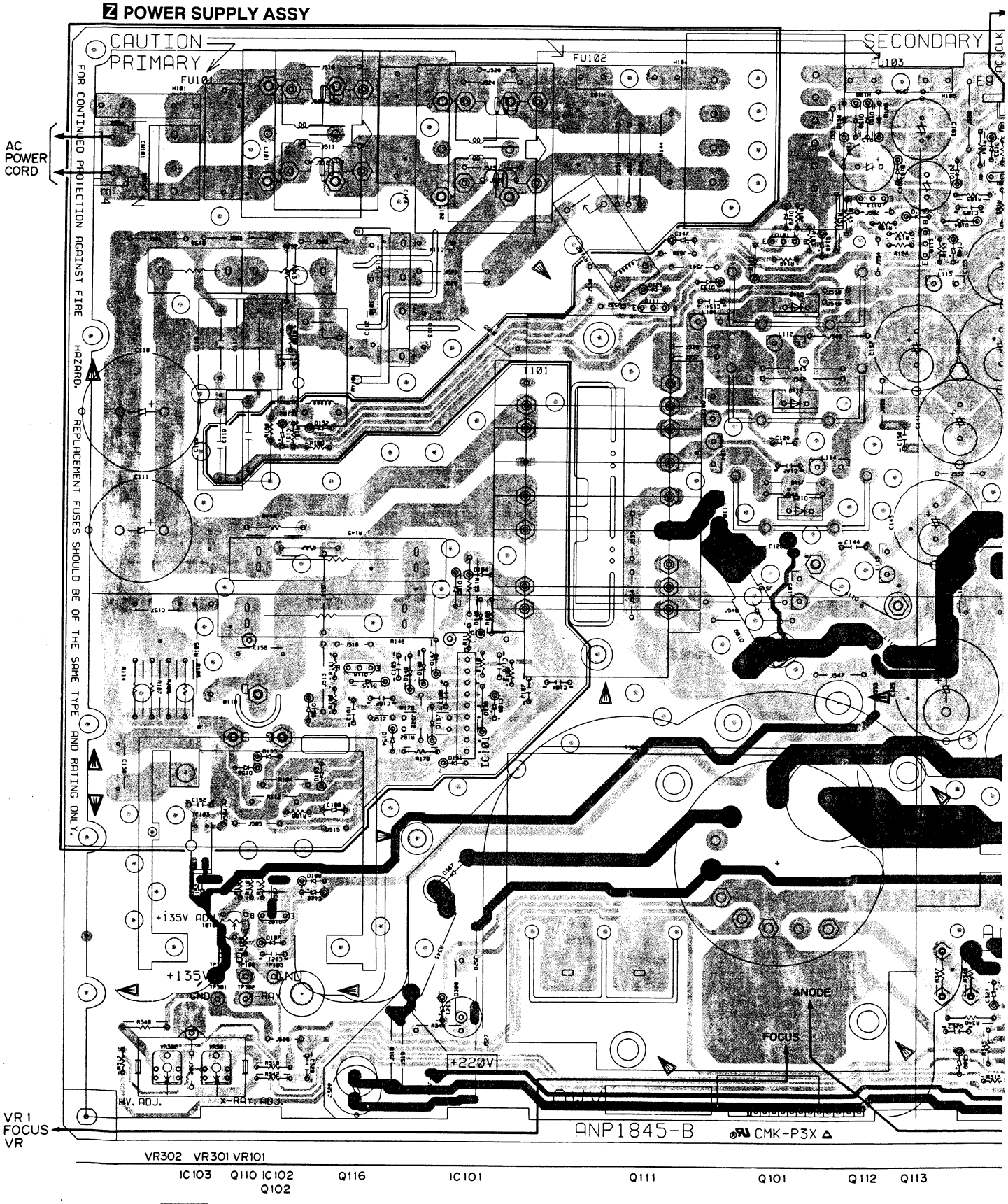
(ANP1849-B)

● This PCB is double sided.



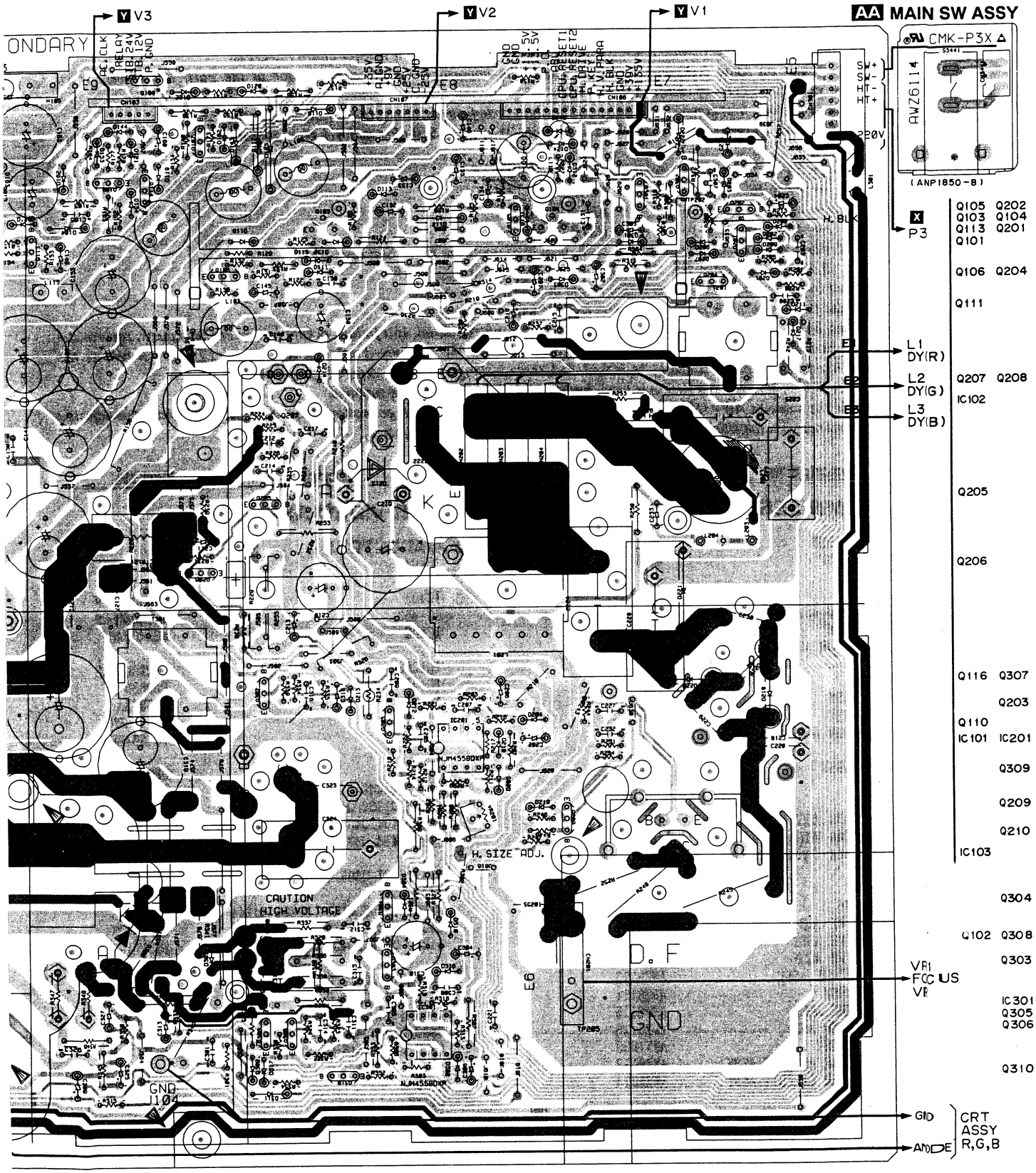
4.14 POWER SUPPLY AND MAIN SW ASSEMBLIES

Z POWER SUPPLY ASSY



mark shows the charged section (Power supply primary side circuit).

mark shows a high voltage generation point (excepting the charged section).



● This diagram is viewed from the mounted parts side.

5. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

  560 Ω → 56 × 10¹ → 561 ····· RD1/4PU 5 6 1 J

  47k Ω → 47 × 10³ → 473 ····· RD1/4PU 4 7 3 J

  0.5 Ω → 0R5 ····· RN2H 0 R 5 K

  1 Ω → 1R0 ····· RS1P 1 R 0 K

  Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

  5.62k Ω → 562 × 10¹ → 5621 ····· RN1/4PC 5 6 2 1 F
- *Parts marked by ☆ are important parts which relate in X-rays radiation. If any of these parts need to be replaced, always replace with specified parts.*
- *Parts marked by ✕ are important parts which relate in X-rays radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by ✕ is replaced, there is danger of being exposed to X-rays.*
- *For POWER SUPPLY ASSY, AWV1558 is used, but for servicing, AWV1565 is supplied. AWV1565 is the same as AWV1558 of which X-ray protection and high voltage sections have been adjusted and these adjusted parts are covered with the shield cases. Therefore, AWV1565 need not be adjusted.*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
☆		POWER SUPPLY ASSY	AWV1565
		TUNER•VIDEO ASSY	AWV1559
NSP		AV I/O ASSY	AWV1560
		├ CONVERGENCE ASSY	AWZ6098
		├ AV I/O ASSY	AWZ6099
		└ Y/C SELECTOR ASSY	AWZ6100
NSP		P IN P ASSY	AWV1561
		├ P IN P ASSY	AWZ6101
		├ EXT SP ASSY	AWZ6102
		└ B CONNECTOR ASSY	AWZ6103
NSP		TUNER 2•ISC ASSY	AWV1562
		├ ISC ASSY	AWZ6104
		├ VM ASSY	AWZ6105
		├ A CONNECTOR ASSY	AWZ6106
		├ FULL CINEMA MUTE ASSY	AWZ6107
		└ FULL CINEMA CONVER ASSY	AWZ6108
NSP		AUDIO ASSY	AWV1563
		├ AUDIO ASSY	AWZ6109
		├ R. CRT DRIVE ASSY	AWZ6110
		├ G. CRT DRIVE ASSY	AWZ6111
		├ B. CRT DRIVE ASSY	AWZ6112
		├ FRONT CONTROL ASSY	AWZ6113
		├ MAIN SW ASSY	AWZ6114
		├ IR RECEIVER ASSY	AWZ6115
		├ SUB RECEIVER ASSY	AWZ6116
		└ RECEIVER ASSY	AWX1069
		├ RECEIVER ELEMENT ASSY	AWZ6073
		└ RECEIVER CIRCUIT ASSY	AWZ6074
NSP		3D Y/C ASSY	AWV1564
		├ 3D Y/C ASSY	AWZ6117
		├ FRONT INPUT ASSY	AWZ6118
		├ D CONNECTOR ASSY	AWZ6119
		└ PINP SELECTOR ASSY	AWZ6120

A TUNER•VIDEO ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
		IC804	AT24C08-10PC
		IC1301	CXA1734S
		IC403	MC14011BCP
		IC1353	MC14066BCP
		IC802	MC34064P
		IC1203	NJM7809FAS
		IC402	PA0030
		IC801	PD5363A
		IC401	TA8845BN
		IC803	TC4094BP
		IC1351	UPC1853CT-01
		Q1202, Q1206, Q1208, Q1213, Q1302	2SA933S
		Q1351, Q1352, Q1357-Q1359	2SA933S
		Q403, Q404, Q406, Q409-Q411	2SA933S
		Q416-Q418, Q423-Q426, Q444	2SA933S
		Q447, Q801, Q805, Q812, Q821	2SA933S
		Q823-Q827	2SA933S
		Q1204, Q1205, Q1207, Q1209-Q1211	2SC1740S
		Q1303, Q1304, Q1354-Q1356	2SC1740S
		Q1360-Q1366, Q401, Q402, Q405	2SC1740S
		Q407, Q408, Q412-Q415	2SC1740S
		Q419-Q421, Q427-Q442	2SC1740S
		Q445, Q446, Q450-Q452	2SC1740S
		Q802, Q803, Q806-Q809	2SC1740S
		Q813, Q814, Q816-Q820, Q822	2SC1740S
		Q422	2SC2235
		Q1212	2SC2878
		Q804, Q1203	2SD880
		Q443	2SK117

Mark	No.	Description	Part No.
	Q1201, Q1301		XDC124ES
	D1207-D1211, D1352, D1353		HSS104-02
	D1355-D1366, D402-D404, D411-D413		HSS104-02
	D426-D432, D435, D436		HSS104-02
	D439, D440, D443, D444, D448		HSS104-02
	D455, D456, D462, D464-D466		HSS104-02
	D468, D471, D472-D474, D476-D479		HSS104-02
	D482-D485, D487, D801, D802		HSS104-02
	D804, D805, D807-D809		HSS104-02
	D811, D812, D816-D818		HSS104-02
	D838-D841, D867-D871		HSS104-02
	D873-D877, D889		HSS104-02
	D408		HZS9C3L
	D441		MA723
	D1301, D1302, D409, D410		MTZJ15
	D415, D416, D420-D424		MTZJ15
	D437, D438, D442, D445-D447		MTZJ15
	D449-D454, D457-D461, D463		MTZJ15
	D467, D469, D470, D475, D843		MTZJ15
	D845, D847		MTZJ15
	D803		MTZJ5. 1B
	D414, D1201, D1204, D806, D810, D813		MTZJ6. 8
	D819-D837, D842, D844, D846		MTZJ6. 8
	D848-D866, D872, D878-D884		MTZJ6. 8
	D401		RD2. 2ESB1
	D1203		RD33ESB3
	D1354		RD4. 3ESB3
	D1351		RD4. 7ESB3
	D1202		RD5. 6ESB3
	D405-D407, D417-D419, D425		S5688G
	D433, D434		S5688G
	D488, D489		1SS244
COILS			
	L407, L412		LAU100J
	L409		LAU101J
	L410		LAU150J
	L1201-L1203, L1301		LAU2R2K
	L408		LAU390K
	L411		LAU3R9J
	L401-L403		LAU4R7J
	L404, L405		LAU560J
	L801		LAU8R2K
	L416		ATF-163
CAPACITORS			
	C1311	(3. 3μF/DC50V)	ACH1128
	C1304	(10μF/DC50V)	ACH1129
	TC801		ACM-020
	C403		CCCCH100D50
	C426, C428, C429		CCCCH121J50
	C425, C427, C441, C475, C478		CCCCH151J50
	C477, C844		CCCCH820J50
	C452, C463		CCCSL100D50
	C1208, C832, C833		CCCSL101J50
	C451		CCCSL180J50
	C453, C468, C470, C1252		CCCSL121J50
	C814, C829, C830		CCCSL221J50
	C817		CCCSL270J50
	C442, C443, C450		CCCSL330J50
	C455		CCCSL390J50
	C1210		CCCSL470J50

Mark	No.	Description	Part No.
	C480		CCCSL560J50
	C469, C471		CCCSL680J50
	C1305, C1310, C1360, C410, C412		CEAS010M50
	C418, C419, C431, C804		CEAS010M50
	C810, C820-C823, C835, C840		CEAS010M50
	C812, C837		CEAS0R1M50
	C1213, C432		CEAS100M50
	C456, C457, C460, C467, C811		CEAS100M50
	C449, C839		CEAS101M10
	C408, C420, C458		CEAS101M25
	C465, C482		CEAS102M16
	C806		CEAS102M35
	C1215, C1385		CEAS220M50
	C1356, C1359, C1370-C1373		CEAS2R2M50
	C1387-C1389, C406, C407, C413		CEAS2R2M50
	C472		CEAS2R2M50
	C824		CEAS330M35
	C1374		CEAS331M16
	C836		CEAS331M50
	C424		CEAS471M10
	C1364, C1366		CEAS3R3M50
	C1221, C1369		CEAS470M25
	C1376, C1379, C415, C416, C423		CEAS470M25
	C430, C435, C454, C473, C819		CEAS470M25
	C827, C846, C851		CEAS470M25
	C1217		CEAS471M16
	C1307, C1316		CEAS4R7M50
	C1319, C1320, C1322, C417, C462		CEAS4R7M50
	C826		CEASR22M50
	C1312, C434		CEASR47M50
	C1247, C1251, C1318		CEHAQ101M25
	C807		CEHAQ010M50
	C1301, C1306, C1315, C1317		CEHAQ4R7M50
	C1303, C1204, C1212		CEHAQ100M50
	C808, C1205		CEHAQ101M10
	C1245, C1249		CEHAQ331M16
	C1220		CEHAQ470M25
	C1206		CEHAQ471M10
	C1308		CFTXA224J50
	C1211, C440, C825, C838		CKCYB102K50
	C479		CKCYB103K50
	C831		CCCH101J50
	C1365, C1367		CKCYB152K50
	C1302, C1309		CKCYB222K50
	C1253		CKCYB391K50
	C843		CKCYB471K50
	C405		CKCYB472K50
	C815		CKCYB561K50
	C1201, C1202, C1207, C1216, C1224		CKCYF103Z50
	C1246, C1248, C1321, C1357, C409		CKCYF103Z50
	C421, C436-C439, C802, C803		CKCYF103Z50
	C805, C809, C813, C818, C828		CKCYF103Z50
	C834, C842, C845, C852		CKCYF103Z50
	C1368, C1375, C1377, C433, C459		CKCYF473Z50
	C466, C474, C483, C816		CKCYF473Z50
	C1386, C841		CQMA102J50
	C402		CQMA103J50
	C1352, C1361, C1363, C401, C422		CQMA104J50
	C461		CQMA104J50

Mark	No.	Description	Part No.
	C411		CQMA123J50
	C404		CQMA183J50
	C1353		CQMA222J50
	C1355, C1358		CQMA223J50
	C1314		CQMA272J50
	C414		CQMA392J50
	C1313, C801		CQMA473J50
	C1354, C476		CQMA681J50
	C1362, C1378		CQMA682J50
	C444, C445		CQMA683J50
	C1351		CQMA823J50
RESISTORS			
	R464, R465, R470-R472		RD1/2PM100J
	R466		RD1/2PM120J
	R810		RD1/2PM122J
	R515		RD1/2PM221J
	R1206, R468, R469, R474		RD1/2PM271J
	R1207, R1209		RD1/2PM681J
	R679		RD1/2PM6R8J
	R1389		RD1/2PMFL330J
	R809		RD1/4PMFL3R9J
⚠	R958, R959		RD1/4PMFL3R9J
	R1305		RN1/4PC4302F
	R1307		RN1/4PC6202F
	R458		RS1MMF220J
	R1353		RS1MMF470J
	R1261		RSS2MM220J
	R641		RS2LMF4R7J
⚠	R1205		RS2MMF220J
⚠	R1259		RS2LMF010J
	R830		RS3LMF100J
	VR1201(4.7kΩ)		ACP1042
	VR801		VRTS6VS153
	Other Resistors		RD1/4PU□□□J
OTHERS			
	DL406	DELAY LINE	ATN1014
		PULG CORD	ADE-082
	J1203	3P HOUSING WIRE	ADX2240
		PIN JACK(1P)	AKB1111
	CN1351	PHONO JACK 2-P	AKB1151
		HEAT SINK	ANH-880
	X801	CERAMIC RESONATOR	ASS1015
	X402	CERAMIC RESONATOR	ASS1019
	X401	CRYSTAL RESONATOR	ASS1091
	CN405	PLUG 10-P	KM200IA10
	CN404	19P PLUG	KM200IA19
	CN805	7P PLUG	KM200IA7
	CN801	PLUG 8-P	KM250MA8B
	CN804	PLUG 8-P	KM250MA8R
	CN401	PLUG 9-P	KM250MA9R
	CN802	10P SOCKET	KP250NA10
	CN809	12P SOCKET	KP250NA12
	CN1202, CN803	SOCKET 15-P	KP250NA15
	CN808	SOCKET 3-P	KP250NA3
	CN811, CN814	SOCKET 4-P	KP250NA4
	CN1355, CN813	SOCKET 5-P	KP250NA5
	CN1354	SOCKET 7-P	KP250NA7
	CN1203, CN403, CN807	8P SOCKET	KP250NA8
	CN402	9P SOCKET	KP250NA9
		SCREW	PBZ30P080FMC

Mark	No.	Description	Part No.
B AV I/O ASSY			
SEMICONDUCTORS			
	IC1503		BA7649A
	IC1502		NJM78M09FAS
	IC1501, IC1504		TC4051BF
	IC1651		TC74HC4094AF
	Q1510-Q1512, Q1514, Q1515		2SA1162
	Q1518, Q1519, Q1553		2SA1162
	Q1501-Q1509, Q1513, Q1516, Q1517		2SC2712
	Q1520, Q1525, Q1551, Q1552		2SC2712
	Q1651-Q1655		2SC2712
	Q1550		2SC3377
	D1501, D1503, D1504, D1520-D1523		1SS226
	D1527, D1538, D1539		1SS226
	D1528-D1537		RD15MB
	D1502		RD3.6MB
	D1660		RD6.2MB
	D1505-D1507, D1651, D1655-D1657		RD6.8MB
	D1661, D1662		RD6.8MB
	D1524-D1526		RD9.1MB
COIL			
	L1501		ATH1046
CAPACITORS			
	C1651-C1653		CCSQCH101J50
	C1503, C1504, C1510, C1528, C1531		CEAS101M10
	C1539, C1545, C1637, C1638, C1655		CEAS101M10
	C1508, C1533		CEAS101M25
	C1514		CEAS101M50
	C1501, C1506		CEAS102M10
	C1541		CEAS102M16
	C1502, C1505, C1507		CEAS221M10
	C1517, C1536-C1538, C1639, C1640		CEAS2R2M50
	C1520-C1527, C1530, C1532		CEAS470M25
	C1543, C1544		CEAS470M25
	C1512, C1513		CEAS471M10
	C1518		CEHAQ101M25
	C1515		CEHAQ102M10
	C1509, C1534, C1547, C1552, C1654		CKCYF103Z50
	C1516, C1519, C1529, C1540, C1546		CKCYF473Z50
RESISTORS			
	R1527, R1538		RD1/2PM181J
	R1582		RD1/2PM331J
	R1670		RD1/2PMFL271J
	R1621		RD1/4PMFL470J
	R1676		RD1/2PMFL470J
	R1504, R1507		RD1/4PM750J
	R1531, R1547, R1548, R1583, R1612		RD1/4PMFL3R9J
	R1623, R1635, R1637		RD1/4PMFL3R9J
⚠	R1558		RS2MMF150J
	Other Resistors		RS1/10S□□□J
OTHERS			
		PIN JACK(12P)	AKB1114
		PIN JACK(3P)	AKB1137
	CN1505	PLUG 10-P	KM200IA10
	CN1507	11P PLUG	KM200IA11
	CN1508	7P PLUG	KM200IA7

Mark	No.	Description	Part No.
	CN1503	PLUG 3-P	KM250MA3
	CN1504	PLUG 9-P	KM250MA9B
	CN1506	10P PLUG	KM250NA10L
	CN1509	PLUG 15-P	KM250NA15L

C Y/C SELECTOR ASSY

SEMICONDUCTORS

	IC1701	TC4052BF
	Q1521, Q1522, Q1524, Q1711, Q1712	2SA1162
	Q1523, Q1701-Q1708	2SC2712
	D1701-D1703	RD9.1MB

CAPACITORS

	C1705	CEAS101M25
	C1551	CEAS010M50
	C1550, C1710-C1712	CEAS470M25
	C1706, C1713-C1715, C1730-C1732	CKCYF103Z50
	C1549	CKSQYF102Z50
	C1548	CKSQYF103Z50

RESISTORS

	R1701, R1703, R1705	RD1/2PM750J
	R1738, R1739	RD1/2PM821J
	Other Resistors	RS1/10S□□□J

OTHERS

	CN1701 SOCKET	AKP1066

D P IN P SELECTOR ASSY

SEMICONDUCTORS

	IC1751	BA7649A
	Q1751	2SA1162
	D1751-D1755	1SS226

CAPACITORS

	C1751, C1752, C1754, C1755	CEAS470M25
	C1753	CKCYF473Z50

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	CN1751 11P SOCKET	KP200IA11L
	CN1752 7P SOCKET	KP200IA7L

E FRONT INPUT ASSY

SEMICONDUCTORS

	Q3931-Q3933	2SC2712
	D3931, D3932	RD15MB

CAPACITORS

	C3931, C3933-C3935	CEAS470M25
	C3936	CKSQYF103Z50
	C3932	CKSQYF473Z50

Mark	No.	Description	Part No.

RESISTORS

	R3948	RD1/2PMFL750J
	R3931	RD1/4PMFL3R9J
	Other Resistors	RS1/10S□□□J

OTHERS

	PIN JACK(1P)	AKB1111
	PIN JACK(1P)	AKB1112
	PIN JACK(1P)	AKB1113
	SOCKET	AKP1051
CN3931	PLUG 9-P	KM250MA9

F IR RECEIVER ASSY

SEMICONDUCTOR

	Q3961	2SC1740S

COIL

	L3951	LAU221K

CAPACITORS

	C3951	CEJA101M10
	C3961	CKCYB103K50

RESISTORS

	All Resistors	RD1/4PU□□□J

OTHERS

	CABLE HOLDER	AKT1012
	SHIELD CASE A(MET)	ANK7009

G SUB RECEIVER ASSY

SEMICONDUCTOR

	IC3972	M5223P

CAPACITORS

	C3975	CEAS010M50
	C3972-C3974	CKCYB103K50
	C3971	CKCYX104M16

RESISTORS

	All Resistors	RD1/4PU□□□J

OTHERS

	CABLE HOLDER	AKT1012
	SHIELD CASE B(MET)	ANK7010

Mark	No.	Description	Part No.

H FRONT CONTROL ASSY

SEMICONDUCTORS

	IC3882	M5218AL
	IC3881	PD5136
	Q3881	2SA933S
	Q3882, Q3883	2SC1740S
	D3882	AEL1152
	D3881, D3883, D3885, D3886	HSS104-02
	D3884	MTZJ3.0
	PC3881	U5C-08SC

SWITCHES

	S3881-S3892	ASG1034

CAPACITORS

	C3884, C3885	CCDSL221J50
	C3881	CEJA100M35
	C3889	CEJA221M10
	C3886	CEJA2R2M50
	C3882	CEJA330M25
	C3883	CFTXA104J50
	C3891	CKCYB471K50
	C3888	CKCYB472K50
	C3890	CKCYF103Z50
	C3887	CKCYF473Z50

RESISTORS

	R3886	RD1/2PM561J
	R3906	RD1/2PMF470J
	R3887	RD1/2PMF820J
	VR3901 (47kΩ)	ACP1045
	Other Resistors	RD1/4PU□□□J

OTHERS

	CABLE HOLDER	AKT1012
	LED HOLDER	AMR1733
X3881	CERAMIC OSCILLATOR	ASS1043
CN3882	PLUG 3-P	KM250MA3
CN3881	PLUG 5-P	KM250MA5

I RECEIVER ELEMENT ASSY

SEMICONDUCTORS

	IC2602	PD410PI
	IC2601	PFC502
	IC2603	SBX8025-H
	Q2602	2SC2712
	Q2601	2SK302

COIL

	L2601	LAU120J

CAPACITORS

	C2604	CCSQCH820J50
	C2607	CEAL470M6R3
	C2605	CKSQYB103K50
	C2603	CKSQYB473K50
	C2601, C2606	CKSQYF104Z25
	C2602	CQMA182J50

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	LED HOLDER(PLS)	AMR7040

J RECEIVER CIRCUIT ASSY

SEMICONDUCTORS

	IC2501	CXA1600P
	IC2502, IC2504	TC7SU04F
	D2501-D2503	1SS352

COILS

	L2501, L2502	LAU221K

CAPACITORS

	TC2501	ACM7001
	C2520	CCSQCH150J50
	C2514	CCSQCH681J50
	C2501	CEAL100M6R3
	C2508	CEAL101M6R3
	C2503	CEAL4R7M35
	C2504	CEALR10M50
	C2507	CKSQYB103K50
	C2513	CKSQYB104K25
	C2502, C2506	CKSQYB473K50

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

X2501	CERAMIC RESONATOR	ASS7005

K ISC ASSY

SEMICONDUCTORS

	IC2204	LH5268AN1TLL
	IC2202	PD5368
	IC2203	TC74HC02AF
	IC2201	TC74HC123AF
	Q2105, Q2107, Q2109, Q2214, Q2215	2SA1162
	Q2213	2SA1515
	Q2102	2SC1740S
	Q2101	2SC2235
	Q2103, Q2104, Q2106, Q2108	2SC2712
	Q2202, Q2203, Q2206-Q2212	2SC2712
	Q2201, Q2204	XDA124EK
	Q2205	XDC143EK
	D2104, D2105, D2218-D2224	1SS226
	D2201-D2208, D2210, D2215, D2217	1SS352
	D2209	RD3.0ESB1
	D2216	HSS104-02
	D2102	RD33MB
	D2101	RD5.6MB

COILS

	L2201	LCTA220J3225
	L2101-L2103	LAU2R2K

Mark	No.	Description	Part No.
CAPACITORS			
	C2214		ACH1246
	C2201, C2203		CCSQCH102J50
	C2114		CCSQSL470J50
	C2102, C2105, C2106, C2206		CEHAQ100M50
	C2103, C2208		CEHAQ101M10
	C2218		CEHAQ101M50
	C2109, C2119		CEHAQ331M16
	C2101, C2107, C2108, C2205		CEHAQ470M25
	C2211, C2212, C2215		CEHAQ470M25
	C2104, C2118		CEHAQ471M16
	C2204		CEHAQ4R7M50
	C2115		CKSQYF102Z50
	C2110-C2113, C2116, C2117, C2202		CKSQYF103Z50
	C2207, C2209, C2210, C2213, C2217		CKSQYF103Z50
	C2219		CKSQYF103Z50
	C2216		CKSQYF473Z50
	C2120		CCSQSL121J50
	C2121		CCSQSL391J50
RESISTORS			
	R2102		RD1/2PM271J
	R2265		RD1/2PM330J
	R2103, R2104		RD1/2PM681J
	R2205		RD1/4PU102J
	R2126		RD1/4PU562J
	R2250		RS1MMF220J
	R2101		RS2MMF220J
	VR2101 (2.2kΩ)		ACP1041
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN2204	JACK	AKN-209
	CN2202	JACK	AKN1028
	CN2206	JACK	AKN1061
	X2201	CERAMIC RESONATOR	ASS1025
	CN2203	12P PLUG	KM250NA12L
	CN2201	PLUG 3-P	KM250NA3L
	CN2101	8P PLUG	KM250NA8L

L A CONNECTOR ASSY

OTHERS

5061	CABLE HOLDER	AKT1011
J3281	JUMPER WIRE	D15A13-150-2468
CN5064	10P SOCKET	KP200IA10L
CN5063	19P SOCKET	KP200IA19L

M B CONNECTOR ASSY

OTHERS

CN3285	10P SOCKET	KP200IA10L

N D CONNECTOR ASSY

OTHERS

CN3280	10P SOCKET	KP200IA10L

Mark	No.	Description	Part No.
O P IN P ASSY			
SEMICONDUCTORS			
	IC3004		HA11579
	IC3002		HD49420FS
	IC3001		HM53461ZP-12
	IC3006, IC6563		M5233P
	IC3005		NJM7805FAS
	IC3003		TC4538BF
	IC6561, IC6562		TC74HC4066AF
	Q1817, Q1901, Q1902, Q1906-Q1927		2SA1162
	Q3013, Q6561-Q6563, Q6570, Q6574		2SA1162
	Q6576-Q6578, Q6582, Q6583, Q6587		2SA1162
	Q6593, Q6594		2SA1162
	Q1801-Q1809, Q1813-Q1816		2SC2712
	Q1903, Q1904, Q1928-Q1932		2SC2712
	Q3001-Q3003, Q3005, Q3007		2SC2712
	Q6564-Q6569, Q6571-Q6573, Q6575		2SC2712
	Q6579-Q6581, Q6584-Q6586		2SC2712
	Q6588-Q6592, Q6595-Q6597		2SC2712
	Q1812, Q1905		2SK208
	Q3006, Q3010-Q3012		XDC143EK
	D1912-D1914, D3003-D3005		1SS226
	D1801, D1803, D1906-D1911, D3001		1SS352
	D6561-D6573		1SS352
	D1901-D1905		RD15MB
	D3007		RD6.8MB
COILS AND FILTERS			
	F3002		ATF1166
	L1902, L3006		ATH1046
	L1803		ATX1008
	F3001		CTJ1002
	L3008		LCTA101J3225
	L1802		LCTA120J3225
	L3007		LCTA680J3225
	L1801		LCTA8R8J3225
	L3001-L3005		LCTA8R2J3225
CAPACITORS			
	C1816, C3022, C3069, C6566-C6568		CCSQCH101J50
	C6583		CCSQCH101J50
	C1804, C3061		CCSQCH121J50
	C3017, C3018, C3071		CCSQCH151J50
	C3060		CCSQCH220J50
	C1805		CCSQCH221J50
	C3049		CCSQCH270J50
	C3027, C3030		CCSQCH271J50
	C3062, C3068		CCSQCH330J50
	C6569		CCSQCH390J50
	C3070		CCSQCH470J50
	C1901		CCSQSL101J50
	C1807		CCSQSL122J50
	C1912		CCSQSL331J50
	C1808		CCSQSL821J50
	C1902, C3050, C3053		CEAS1 0M50
	C1802, C1809, C1810, C1903		CEAS1□0M50
	C1908-C1910, C3028, C3039, C3051		CEAS1□0M50
	C3056, C3057, C3065, C3072		CEAS1□0M50
	C6561, C6562, C6564, C6570, C6576		CEAS1□0M50
	C6578, C6580, C6581		CEAS1□0M50

Mark	No.	Description	Part No.
	C3012, C3014, C3040, C3046, C3052		CEAS101M10
	C3074		CEAS101M10
	C1813, C3075, C6572, C6579		CEAS101M25
	C6584, C6585		CEAS101M25
	C3015, C3016, C3026, C3064		CEAS220M50
	C3019		CEAS2R2M50
	C1803, C1811		CEAS330M25
	C3078		CEAS330M50
	C1815, C1817, C3024, C6573, C6577		CEAS470M25
	C1911		CEAS471M16
	C3048		CEAS4R7M50
	C3037, C3038		CEASR22M50
	C3020, C3021		CEASR47M50
	C3029, C3031		CFTXA334J50
	C3035, C3036, C6574		CKSQYB102K50
	C1801, C3006, C3047, C3058		CKSQYB103K50
	C3001-C3004, C3054, C3059		CKSQYB223K50
	C3063		CKSQYB333K50
	C1806		CKSQYB392K50
	C3005, C3007-C3010, C3013, C3023		CKSQYF104Z25
	C3041-C3045, C3055, C3067, C3073		CKSQYF104Z25
	C3076, C3079, C3080		CKSQYF104Z25
	C1904-C1907		CKSQYF222Z50
	C1814, C3011, C6563, C6571, C6582		CKSQYF473Z50
	C6565		CQMA152J50
	C3033, C3034		CQMA153J50
	C3077		CKDYF103Z50
RESISTORS			
	R1835		RD1/2PMFL150J
	R1901		RS1MMF1R8J
	R3067, R3069		RS3LMF220J
	VR3002	(470Ω)	ACP1039
	VR3001, VR6561	(1kΩ)	ACP1040
	VR3003, VR6562	(4.7kΩ)	ACP1042
	Other Resistors		RS1/10S□□□J
OTHERS			
	DL1901		ATN1042
		HEAT SINK	ANH-880
	X3001	CRYSTAL RESONATOR	ASS1091
	CN1803	PLUG 10-P	KM200IA10
	CN1801	4-P PLUG	KM250NA4L
	CN1802	8P PLUG	KM250NA8L
	CN1901	9P PLUG	KM250NA9L
		SCREW	PBZ30P080FMC

P 3D Y/C ASSY

SEMICONDUCTORS

IC3508		MSM514222B-30
IC3506, IC3507		NJM2233BLA
IC3503, IC3504		NJM7805FAS
IC3511		UPC1861GR
IC3502		UPC1862GS
IC3501		UPC659AGS
IC3510		UPD42280V-30
IC3505		UPD6487GF3BA
Q3503, Q3504, Q3506, Q3513, Q3515		2SA1162
Q3501, Q3502, Q3505, Q3507-Q3512		2SC2712
Q3514, Q3520, Q3521, Q3523-Q3525		2SC2712
Q3529, Q3533-Q3537		2SC2712
D3501		1SS184
D3502-D3505		1SS226

COILS AND FILTERS

F3502, F3503		ATF1127
F3504		ATF1179
L3522, L3523, L3532		ATH1046
DL3501		ATN1011
L3502-L3506, L3508-L3520, L3526		ATX1008
L3528-L3531		ATX1008
L3507		LCTA100J3225
L3524, L3525		LCTA150J3225
L3501, L3527		LCTA220J3225

CAPACITORS

C3521		CCSQCH100D50
C3628		CCSQCH120J50
C3519		CCSQCH151J50
C3537		CCSQCH271J50
C3531, C3561, C3627		CCSQCH330J50
C3501, C3533		CCSQCH390J50
C3515		CCSQCH470J50
C3543, C3544		CEAS010M50
C3518		CEAS0R1M50
C3623		CEAS100M50
C3502		CEAS101M25
C3504, C3512, C3517, C3528, C3558		CEAS221M10
C3568, C3578, C3599		CEAS221M10
C3569		CEAS2R2M50
C3523, C3539, C3546, C3548, C3551		CEAS470M25
C3566, C3567, C3582, C3583, C3597		CEAS470M25
C3604, C3606, C3608, C3610, C3612		CEAS470M25
C3620, C3622, C3624, C3625		CEAS470M25
C3525, C3542		CEAS4R7M50
C3530		CEASR47M50
C3586-C3588, C3592, C3593		CEHAQ331M16
C3560		CFTXA104J50
C3535		CKSQYB102K50
C3629, C3630, C3632-C3634		CKSQYB103K50
C3540		CKSQYB152K50
C3536		CKSQYB222K50
C3513, C3514, C3516, C3520, C3524		CKSQYF103Z50
C3526, C3527, C3532, C3534, C3538		CKSQYF103Z50
C3541, C3545, C3549, C3550, C3555		CKSQYF103Z50
C3559, C3562-C3565, C3589-C3591		CKSQYF103Z50
C3594, C3595, C3600-C3603, C3605		CKSQYF103Z50
C3503, C3505-C3511, C3547		CKSQYF104Z50
C3552-C3554, C3556, C3557		CKSQYF104Z50
C3571-C3573, C3577, C3596, C3598		CKSQYF104Z50
C3607, C3609		CKSQYF104Z50
C3570		CKSQYF222Z50
C3529		CQMA223J50

RESISTORS

R3646		RS1MMF150J
R3595		RS1MMF270J
R3594		RS3LMF270J
VR3501		VRTS6VS222
VR3502		VRTS6VS471
Other Resistors		RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
		HEAT SINK M	ANH-697
	X3501	CRYSTAL RESONATOR	ASS1056
	X3502	CERAMIC RESONATOR	ASS1112
	CN3503	4-P PLUG	KM250NA4L
	CN3501	PLUG 5-P	KM250NA5L
		SCREW	PBZ30P080FMC

Q AUDIO ASSY

SEMICONDUCTORS			
	IC2901		LA4280-P
	Q2903		2SA933S
	Q2902, Q2904-Q2906		2SC1740S
	Q2901		2SD1276A
	D2922		BR3371XJ30A
	D2902-D2904, D2906, D2908-D2921		HSS104-02
	D2924-D2927, D2929, D2930		HSS104-02
	D2905, D2907		MTZJ6.8
	D2901		RD5.6ESB3
	D2928		RD9.1ESB3
	D2923		S5688G
COILS			
	L2901, L2902		ATH-133
	L2903		ATF-163
RELAY			
	RY2903		ASR1040
CAPACITORS			
	C2923, C2924	(3.3μF/DC63V)	ACH1127
	C2906, C2913		CCCSL151J50
	C2939		CEHAQ220M50
	C2922		CEHAQ221M10
	C2925		CEHAQ470M25
	C2901, C2905		CEHAQ471M50
	C2908, C2911		CEHAQ100M50
	C2909		CEHAQ101M25
	C2920, C2921		CEHAQ222M35
	C2938		CEHAQ100M50
	C2907, C2910		CEHAQ330M50
	C2912, C2917		CKCYB102K50
	C2902		CKCYB561K50
	C2903, C2926		CKCYF103Z50
	C2914-C2916		CKCYF473Z50
	C2918, C2919		CQMA124J50
RESISTORS			
	R2921, R2923		RD1/2PM152J
	R2904		RN1/4PC2702F
	R2903		RN1/4PC6201F
	R2916, R2917		RD1/4PMFL100J
	R2912, R2914		RD1/4PMFL2R2J
	R2950		RT10PZ5R6K
	Other Resistors		RD1/4PU□□□□J

Mark	No.	Description	Part No.
OTHERS			
	J2901	4P HOUSING WIRE	ADX2255
		PLATE SPRING	ANG1569
		HEAT SINK	ANH-880
		SCREW	BBZ30P060FMC
		SCREW	BBZ30P080FCU
	CN2902	PLUG 8-P	KM250MA8
	CN2903	PLUG 5-P	KM250NA5L
	CN2904	7-P PLUG	KM250NA7L
		SCREW	PBZ30P080FMC

R EXT SP ASSY

OTHERS			
		SPEAKER TERMINAL 4-P	AKE1030
	CN6351	PLUG 4-P	KM250MA4

S FULL CINEMA MUTE ASSY

SEMICONDUCTORS			
	IC2009		TC4013BF
	IC2002		TC74HC04AF
	IC2001		TC74HC4040AF
	IC2005		TC74HC4538AF
	Q2002, Q2004-Q2006		2SC2712
	Q2001		2SA1162
	D2005-D2010, D2012-D2018		1SS352
	D2020-D2022, D2024-D2034, D2036, D2037		1SS352
	D2001-D2004, D2023, D2035		RD6.8MB
CAPACITORS			
	C2005		CCSQCH151J50
	C2002, C2004, C2007, C2011		CEAS[illegible]70M25
	C2001, C2003, C2006, C2010		CKCY[illegible]473Z50
	C2008		CQMA[illegible]71J50
	C2009		CQPA[illegible]62J100
RESISTORS			
	R2037		RD1/2PMFL3R9J
	R2007		RN1/4PC1202F
	VR2001		VRTB[illegible]VS104
	VR2002		VRTS[illegible]VS103
	Other Resistors		RS1/1[illegible]OS□□□J
OTHERS			
	CN2001	7P SOCKET	KP20[illegible]A7L

T FULL CINEMA CONVER ASSY

SEMICONDUCTORS		
	IC6801	CA0[illegible]7AM
	IC6802	TC7H[illegible]C4066AF
	Q6802, Q6804	2SA[illegible]62
	Q6801, Q6803	2SC[illegible]12
	D6801-D6812	1SS[illegible]6

Mark	No.	Description	Part No.
CAPACITORS			
	C6803, C6804		CEAS101M10
	C6801, C6802		CKCYF473Z50
	C6805-C6807		CKSQYF473Z50
RESISTORS			
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN6802	7P SOCKET	KP200IA7L
	CN6801	9P SOCKET	KP200IA9L

U CONVERGENCE ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC2323		CA0007AM
	IC2303, IC2311, IC2313, IC2320, IC2322		NJM4558M-D
	IC2321		NJM78M05FAS
	IC2312		NJM79M05FA
	IC2301, IC2302		PA0053B
	IC2307-IC2309		PM0002B
	IC2317, IC2319		STK392-110
	Q2302, Q2329, Q2330, Q2332, Q2333		2SA1162
	Q2337, Q2338		2SA1162
	Q2314		2SB950A
	Q2303-Q2308, Q2310-Q2313		2SC2712
	Q2316-Q2318, Q2322-Q2324		2SC2712
	Q2326, Q2327, Q2334-Q2336, Q2339		2SC2712
	Q2315		2SD1276A
	Q2309		FMS1A
	D2301, D2302, D2307, D2308, D2312		1SS226
	D2314-D2316, D2320, D2325, D2326		1SS226
	D2334, D2335, D2337-D2340		1SS226
	D2343, D2344, D2347-D2353, D2355		1SS226
	D2356, D2360		1SS226
	D2365, D2366, D2382-D2387		1SS226
	D2391, D2392		1SS226
	D2305, D2379, D2380		1SS352
	D2381		BR3371XJ30A
	D2313, D2319		RD12MB
	D2317, D2354		RD15MB
	D2306		RD5.1MB
	D2318, D2323, D2324, D2332, D2333		RD6.8MB
	D2341, D2342, D2389, D2390		RD6.8MB
	D2367-D2378		S5688G
	D2303		HSS104-02
CAPACITORS			
	C2343-C2348, C2356-C2361		CCSQSL101J50
	C2367-C2372		CCSQSL101J50
	C2375		CCSQSL120J50
	C2396, C2397, C2406-C2408		CCSQSL151J50
	C2418-C2420		CCSQSL151J50
	C2435-C2442		CCSQSL221J50
	C2398		CCSQSL331J50
	C2377		CCSQSL680J50
	C2425		CEANP100M35
	C2301, C2303, C2304, C2315		CEAS010M50
	C2337		CEANP100M50
	C2329, C2331, C2332, C2374		CEAS100M50
	C2431, C2432		CEAS100M50
	C2424		CEAS101M25
	C2318		CEAS1R5M50
	C2319, C2330		CEAS220M50
	C2443		CEAS221M10
	C2350		CEAS221M16
	C2316, C2322		CEAS330M35
	C2310, C2312, C2324, C2326, C2339		CEAS331M6
	C2341, C2352, C2354, C2363, C2365		CEAS331M6
	C2321, C2426		CEAS470M25
	C2306		CEASR47M50
	C2383, C2433, C2448, C2449		CEHAQ101M25
	C2384		CEHAQ221M10
	C2400, C2401, C2409, C2410		CEHAQ221M35
	C2412, C2413, C2421, C2422		CEHAQ221M35
	C2427, C2428		CEHAQ221M35
	C2450		CEHAQ470M50
	C2317		CFTYA184J50
	C2320, C2328		CFTYA224J50
	C2394		CKSQYB122K50
	C2395		CKSQYB152K50
	C2399		CKSQYB681K50
	C2451		CCSQSL101J50
	C2465		CKSQYF103Z50
	C2308, C2309, C2311, C2323, C2325		CKSQYF473Z50
	C2327, C2333-C2335, C2340, C2342		CKSQYF473Z50
	C2351, C2353, C2355, C2362, C2364		CKSQYF473Z50
	C2366, C2373, C2376, C2378, C2379		CKSQYF473Z50
	C2385-C2389, C2391-C2393		CKSQYF473Z50
	C2402-C2405, C2414-C2417		CKSQYF473Z50
	C2429, C2430, C2434, C2444		CKSQYF473Z50
	C2452-C2454		CKSQYF473Z50
	C2307		CQMA102J50
	C2349		CQMA104J50
	C2302, C2305		CQMA471J50
	C2314		CQMA821J50
	C2313		CQPA152J100
RESISTORS			
	R2617-R2622		RD1/2PM151J
	R2335		RD1/4PM103J
	R2341		RD1/4PM683J
	R2605, R2606, R2631, R2632		RS1MMF220J
	R2612, R2613, R2635-R2637		RS1MMF2R2J
	R2614-R2616		RS1MMF470J
	R2601		RS1MMF562J
	R2634		RS2LMFR47J
	R2602		RS2LMF010J
	R2633, R2673		RS2MMFR47J
	R2600, R2607, R2610		RS2MMF010J
	R2668		RS3LMF150J
	R2705		RS3LMF1R8J
	R2611		RS3LMF2R2J
	R2604		RS3LMF2R2J
	R2544		RT5PZ560K
	Other Resistors		RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
		SCREW	ABA1056
		WASHER	ABE-053
		SCREW	BBZ30P080FCU
	CN2307	7P PLUG	KM200IA7
	CN2306	9P PLUG	KM200IA9
	CN2301	PLUG 6-P	KM250MA6L
	CN2303	PLUG 6-P	KM250MA6LR
	CN2304	PLUG 15-P	KM250NA15L
	CN2305	8P PLUG	KM250NA8L
		SCREW	PBZ30P080FMC

V R.CRT DRIVE ASSY

SEMICONDUCTORS			
	Q3351		2SC4001
	D3351		S5688G
COILS			
	SG3351, SG3352		AEX-019
	L3352		LAU101K
	L3351, L3353		LAU470K
CAPACITORS			
	C3354	(1000pF/DC2kV)	ACG1001
	C3351		ACH1283
	C3352		CEAS101M25
	C3353		CKCYB681K50
RESISTORS			
	R3355		ACN-225
	R3354		ACN1006
	R3351, R3352		RS3LMF332J
	Other Resistors		RD1/4PU□□□J
OTHERS			
		CRT SOCKET	AKG1005
		HEAT SINK M3	ANH1409
	CN3353	PLUG 3-P	KM250MA3
	CN3351, CN3354	PLUG 3-P	KM250MA3R
		SCREW	PMB30P100FMC

W G.CRT DRIVE ASSY

SEMICONDUCTORS			
	Q3381		2SC4001
	D3381		S5688G
COIL			
	SG3381, SG3382		AEX-019
	L3382		LAU101K
	L3381, L3383		LAU470K
CAPACITORS			
	C3384	(1000pF/DC2kV)	ACG1001
	C3381		ACH1283
	C3382		CEAS101M25
	C3383		CKCYB681K50
RESISTORS			
	R3385		ACN-225
	R3384		ACN1006
	R3381, R3382		RS3LMF332J
	Other Resistors		RD1/4PU□□□J

Mark	No.	Description	Part No.
OTHERS			
	J3381, J3382	LEAD WITH HOUSING	ADX2241
		CRT SOCKET	AKG1005
		HEAT SINK M3	ANH1409
	CN3381, CN3383, CN3384	PLUG 3-P	KM250MA3
		SCREW	PMB30P100FMC

X B.CRT DRIVE ASSY

SEMICONDUCTORS			
	Q3411		2SC4001
	D3411		S5688G
COILS			
	SG3411, SG3412		AEX-019
	L3412		LAU101K
	L3411, L3413		LAU470K
CAPACITORS			
	C3414	(1000pF/DC2kV)	ACG1001
	C3411		ACH1283
	C3412		CEAS101M25
	C3413		CKCYB681K50
RESISTORS			
	R3415		ACN-225
	R3414		ACN1006
	R3411, R3412		RS3LMF332J
	Other Resistors		RD1/4PU□□□J
OTHERS			
		CRT SOCKET	AKG1005
		HEAT SINK M3	ANH1409
	CN3414	PLUG 3-P	KM250MA3
	CN3411, CN3415	PLUG 3-P	KM250MA3B
	CN3413	PLUG 5-P	KM250MA5B
		SCREW	PMB30P100FMC

Y VM ASSY

SEMICONDUCTORS			
	Q2818		2SA1162
	Q2807, Q2810		2SA1265
	Q2811, Q2813		2SA185A
	Q2806, Q2809		2SC2235
	Q2812, Q2814		2SC2275A
	Q2802-Q2805, Q2808, Q2815, Q2817		2SC712
	Q2801		2SC878
	Q2816		2SK08
	D2801, D2804-D2806		1SS266
	D2803		1SS52
	D2802		RD7.5MB
	D2807-D2811		S5688G
COILS			
	DL2801		ATN034
	L2801		LCTA1 00J3225

Mark	No.	Description	Part No.
CAPACITORS			
	C2801		CCSQSL101J50
	C2830		CCSQCH270J50
	C2815, C2824		CEAS010M50
	C2808		CFTXA104J50
	C2817, C2826		CEHAQ010M50
	C2828, C2829		CEHAQ100M50
	C2806		CEHAQ221M10
	C2813, C2822		CEHAQ2R2M2A
	C2804		CEHAQ470M25
	C2809		CEHAQ220M2C
	C2810, C2819		CKDYF103Z500
	C2807		CKSQYB103K50
	C2805, C2814, C2816, C2823, C2825		CKSQYF103Z50
	C2802		CQMA104J50
	C2818, C2827		CQMA104K250
	C2811, C2812, C2820, C2821		CQMA333K250
RESISTORS			
	R2845, R2846		RD1/2PM100J
	R2835, R2836		RD1/2PM150J
	R2828		RD1/2PMFL331J
	R2821, R2825		RD1/4PM561J
	R2803		RD1/4PMFL4R7J
	R2834, R2844		RS1MMF222J
	R2822, R2823, R2826, R2827		RS1MMF2R2J
	R2837, R2838, R2847, R2848		RS1MMF470J
	R2831, R2832, R2841, R2842		RS1MMF473J
	R2850, R2877		RS3LMF181J
	R2849		RS3LMF331J
	Other Resistors		RS1/10S□□□J
OTHERS			
	2805	CABLE HOLDER	AKT1011
		HEAT SINK M	ANH-697
	CN2804	15P SOCKET	KP200IA15L
	CN2802	5P SOCKET	KP200IA5L
	CN2803	7P SOCKET	KP200IA7L
		SCREW	PBZ30P080FMC

Z POWER SUPPLY ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC101		AN8026
	IC201, IC301		NJM4558DXP
	IC102, IC103		PC817CD
	Q205, Q206, Q305, Q306		2SA1145
	Q106, Q107, Q113, Q114, Q116		2SA933S
	Q201		2SA933S
×	Q301, Q302		
	Q101, Q105, Q108, Q109		2SC1740S
	Q111, Q112, Q202, Q209, Q303		2SC1740S
	Q310		2SC1740S
	Q102, Q203, Q304		2SC2705
	Q204, Q307		2SC3332
	Q210		2SC4256(E)
	Q103, Q104, Q207		2SD1276A
⚠	Q308		2SD1276A
⚠	Q208, Q309		2SD2300(D)
	Q110		2SK1168(A)
	D106		11DF2FD
⚠	D215, D306		11DF2FD
	D162, D163		1SS145
	D145		BR3371XJ30A
	D101		D5SBA60(B)
	D308		ERA22-02
	D216, D218, D220, D221		ERB06-15
⚠	D307		ERB06-15
	D110, D125, D142		ERC90M-02
	D109		ERD29-06J
	D107, D116-D119, D121-D124		HSS104-02
	D126-D134, D143, D152, D153		HSS104-02
	D155, D201-D203, D206-D209		HSS104-02
	D211-D214, D217, D219		HSS104-02
	D303-D305, D311, D312		HSS104-02
	D113, D120		HZS18-1L
	D157		HZS24-3L
	D112, D115, D164		HZS6B1L
	D108		HZS6C2L
	D103, D135, D150, D154, D156		MTZJ20
	D151, D205, D210, D309, D310		RD12ESB
	D316, D317		RD12ESB
	D102		RD2.0ESB1
	D104, D105, D222		RD39ESB4
	D146-D149, D301		RD5.1ESB
×	D301		
	D302		RD5.1ESB1
	D144, D204		RD5.1ESB2
	D111		RD5.1ESB3
	D114		RL4Z(A)
	D158-D161		S5688G
COILS			
	L101, L102		ATF1118
	L103, L106, L107, L116, L118		ATH-059
⚠	L201		ATL1053
	L202		ATL1105
	L104, L105, L108-L115		ATX1021
	L203, L204		LTA152J
	L301		LTA272J
TRANSFORMERS			
	T101		ATK1106
	T102		ATT1272
⚠	T201		ATK1045
	T301		ATK1045
×	T302		
RELAYS			
	RY101, RY102		ASR1036
CAPACITORS			
	C123, C124		ACE1107
	C117-C120		ACE1108
	C128	(100pF/DC2kV)	ACG-032
	C112-C115		ACG-501
	C222		ACG1001
	C156, C157, C158	(3300pF/DC2kV)	ACG1008
	C323		ACG1024
	C218, C220, C229, C230	(4700pF/DC2kV)	ACG1028

Mark	No.	Description	Part No.
⚠	C219, C319 (10 μF/DC160V)		ACH1117
	C125		ACH1146
	C111		ACH1147
	C110		ACH1148
	C312, C317		CCCSL101J50
	C214, C217, C314		CCCSL101K500
	C226		CCCSL181K500
	C129, C142, C144, C154		CCCSL221K500
	C180		CEANP010M50
	C233		CEANP4R7M100
	C213		CEHAQ010M2A
	C304, C321, C327		CEHAQ100M50
	C204		CEHAQ221M16
	C211		CEHAQ330M35
	C147, C148		CEHAQ470M25
	C122, C132, C202, C216, C231, C306		CEHAQ010M50
	C210, C310		CEHAQ100M2C
	C133, C134, C145, C146, C149, C201, C206		CEHAQ100M50
	C160		CEHAQ101M25
	C109		CEHAQ101M35
	C322		CEHAQ220M2C
	C313, C325		CEHAQ220M50
	C305, C309		CEHAQ221M10
	C135, C302		CEHAQ221M25
	C141		CEHAQ222M35
	C143		CEHAQ222M50
	C164		CEHAQ331M25
	C138, C166		CEHAQ331M35
	C155		CEHAQ332M25
	C163		CEHAQ102M25
	C136, C137		CEHAQ332M35
	C151		CEHAQ470M25
	C318		CEHAQ4R7M50
	C324		CFPA123J1200
	C228		CFPA273J1000
	C224		CFPA333J1000
⚠	C225		CFPMA564J2E
	C107		CFTXA104J50
	C227		CFTXA333J50
	C221		CFTXA105J50
	C320		CKCYB102K50
	C215		CKCYB102K500
	C301		CKCYB222K50
	C209		CKCYB331K500
	C316		CKCYB392K500
	C308		CKCYB561K50
	C131		CKCYB681K50
	C161, C162, C165, C212		CKCYF103Z50
	C307, C311		CKCYF103Z50
	C315		CKCYF222Z500
	C130, C139, C140, C205, C303		CKCYF473Z50
	C326		CKCYF473Z50
	C126, C127		CKDYF103Z500
	C208		CQMA102J50
	C121		CQMA103J50
	C150		CQMA104J50
	C106		CQMA222J50
	C203		CQMA223J50
	C105		CQMA272J50
	C104, C207		CQMA471J50
	C152		CQMA473J50
	C116		CQMA681J50
	C232		CQMA682J50
	C223		CQPA683J200

RESISTORS

Mark	No.	Description	Part No.
	R144, R165		ACN-208
	R349		ACN-225
	R252		ACN1011
	R121, R157, R158		ACN1032
	R329, R346		RD1/2PM122J
	R253, R328		RD1/2PM152J
	R327		RD1/2PM332J
×	R337		
	R321		RD1/2PM821J
	R182		RD1/2PMFL100J
	R242		RD1/2PMFL103J
	R104, R176, R250		RD1/2PMFL220J
	R215		RD1/2PMFL223J
	R236		RD1/2PMFL470J
	R336		RD1/2PMFL472J
	R234		RD1/2PMFL473J
	R307		RD1/4PM821J
⚠	R344		RD1/4PMFL2R2J
	R164		RD1/4PMFL331J
	R232		RD1/4PMFL392J
	R210, R219, R243		RD1/4PMFL3R9J
⚠	R302, R314		RD1/4PMFL3R9J
	R223, R320		RD1/4PMFL470J
	R235, R338		RD1/4PMFL471J
	R112		RD1/4PMFL681J
⚠	R347		RN1/2PC3902F
⚠	R348		RN1/2PC4302F
×	R340		
	R118, R119		RN1/4PC1603F
	R128		RN1/4PC2101F
	R127		RN1/4PC2431F
	R120		RN1/4PC3601F
	R240		RS1LMF010J
⚠	R326		RS1LMF221J
	R155		RS1LMF391J
	R147, R148		RS3LM123J
	R113		RS1LMF473J
	R105-R107, R114		RS1LMFR22J
⚠	R351		RS1LMFR22J
	R116		RS2LMF223J
	R255		RS3LMF682J
	R229		RS3LMF562J
	R228		RS3LMF010J
	R245, R248		RS3LMF 104J
⚠	R343		RS3LMF 151J
	R257		RS3LMF 153J
	R185		RS3LMF 2R2J
⚠	R358		RS3LMF 822J
	R156		RS3LMF 332J
⚠	R341		RS3LMF R47J
⚠	R331		RS3LMF R68J
	R145, R146		RT1QZ150K
×	R304		

Mark	No.	Description	Part No.
×	R305		
×	R308		
×	R312		
×	R315		
×	R317		
×	R318		
×	R342		
×	VR301		
×	VR302		
	VR101		VRTS6VS102
	VR201		VRTS6HS471
	Other Resistors		RD1/4PU□□□J

OTHERS

	SG201		AEX-019
		SCREW	ABA1228
		RIVET	AEC-441
⚠	FU101	FUSE(8A)	AEK1002
		MICA SHEET	AEP-056
⚠	CN201	PLUG 3P	AKM1055
⚠	CN202-CN204	PLUG 4P	AKM1066
	CN101	PLUG 2P	AKM1130
	H101-H104		AKR1003
		BINDER	AEP-215
		HEAT SINK B	ANH1021
		HEAT SINK	ANH1371
		SW HEAT SINK	ANH1505
		SCREW	BBZ30P080FCU
		SCREW	BBZ30P080FZK
	CN106	15P PLUG	KM200IA15
	CN103	5P PLUG	KM200IA5
	CN107	7P PLUG	KM200IA7
	CN301	PLUG 7P	KM250MA7
		SCREW	PBZ30P080FMC
		SCREW	PBZ30P100FMC
		SCREW	VPZ40P100FMC

AA MAIN SW ASSY

SWITCH

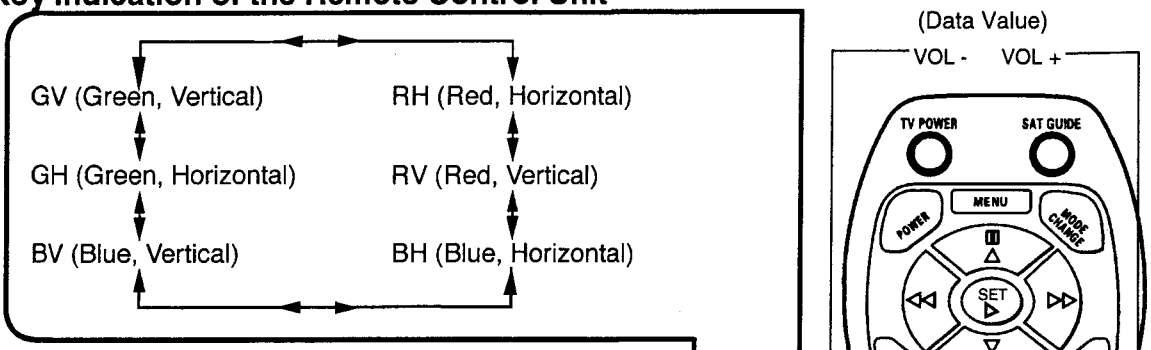
	S3441		ASG1006

OTHERS

	CN3441	PLUG 3-P	KM250MA3R

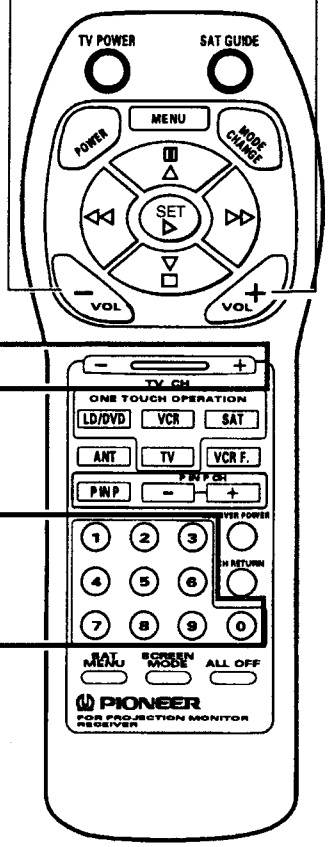
6. ADJUSTMENT

■ Key Indication of the Remote Control Unit



(Data Value)

VOL - VOL +



• **Adjustment Items**

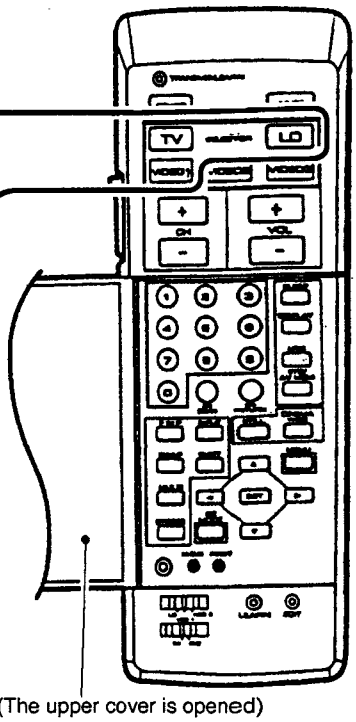
ADJUSTMENT RANGE	ADJUSTMENT OFFSET	Adjustment Name	NUMERIC KEYS	ADJUSTMENT ITEMS	TYPE GH	GV	RH	RV	BH	BV
	O	CUT-R	⓪	STATIC	O	O	O	O	O	O
O		VOL0								
O	/	Color	①	SKEW	O	O	O	O	O	O
O	/	TINT	②	BOW	O	O	O	O	O	O
				4TH BOW	O	/	O	/	O	/
O	O	Contrast	③	SUB KEY	O	O	O	O	O	O
O	O	Bright	④	KEY	O	O	O	O	O	O
				MID KEY	/	O	/	O	/	O
O	O	Sharpness	⑤	SUB PIN	O	O	O	O	O	O
				MS. PIN	O	/	O	/	O	/
				4S PIN	O	/	O	/	O	/
				SC PIN	/	O	/	O	/	O
/	O	Detail	⑥	PIN	O	O	O	O	O	O
				MID PIN	O	O	O	O	O	O
				4TH PIN	O	O	O	O	O	O
O	/	VOL20	⑦	LIN	O	O	O	O	O	O
/	/			4TH LIN	O	/	O	/	O	/
O	/	VOL30	⑧	SIZE	O	O	O	O	O	O
/	O	DRV-G								
O	/	VOL40	⑨	SUB LIN	O	O	O	O	O	O
/	O	DRV-B								

VR : Adjust GH, GV with semifixed VR

OFFSET → CH+ : CUT-G
CONVER → CH− : CUT-B

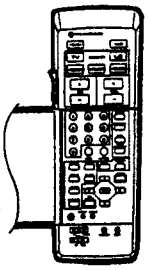
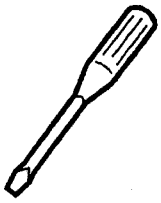
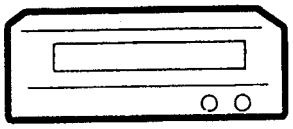
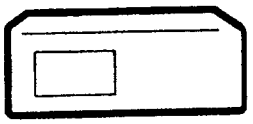
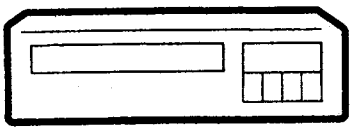
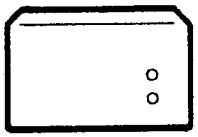
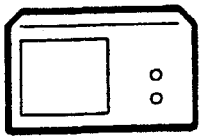
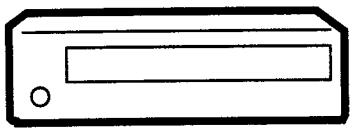
(To output red, green and bkue separately)

TV :To output red ON/OFF
LD :To output green ON/OFF
Video1 :To output blue ON/OFF



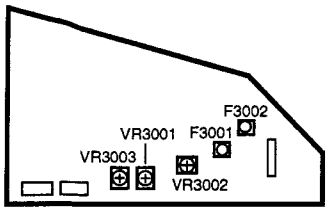
(The upper cover is opened)

■ Jigs and Measuring Instruments

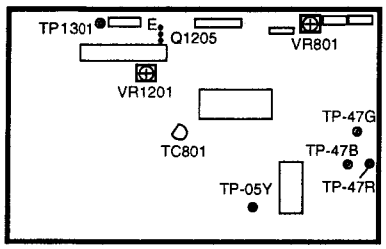
 Remote control unit (CU-SD100)	 Remote control unit AXD1352 (CU-SD076)	 ⊖ Screwdriver
 ⊖ Adjustment screwdriver	 Color bar generator	 D.DC. Volt meter
 LD player	 Monoscope	 Dual trace oscilloscope
 Frequency counter		

■ Assembly Adjustment Location and Items

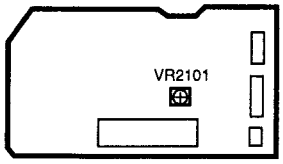
Ⓐ P IN P ASSY



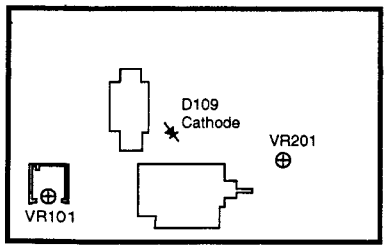
Ⓑ TUNER • VIDEO ASSY



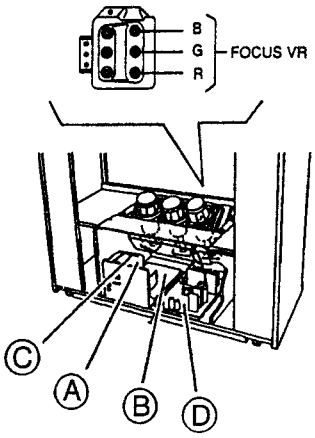
Ⓒ ISC ASSY

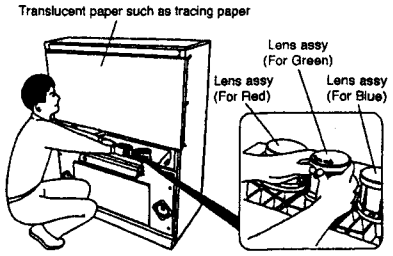


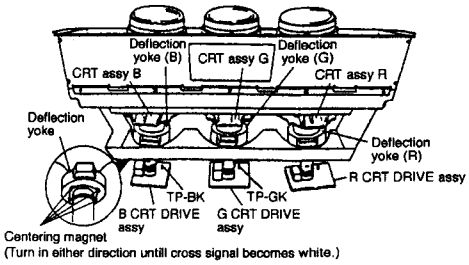
Ⓓ POWER SUPPLY ASSY



FOCUS VR (VR1)





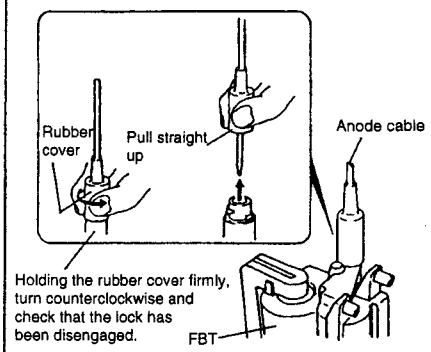


MEASURING METHOD

Disconnect the FBT anode cable as shown below.
Measure at the point where the cable enters the FBT.

Caution: Take extra precaution when measuring the voltage. High voltage are also present in surrounding circuit boards. (CRT DRIVE assy, POWER SUPPLY assy).

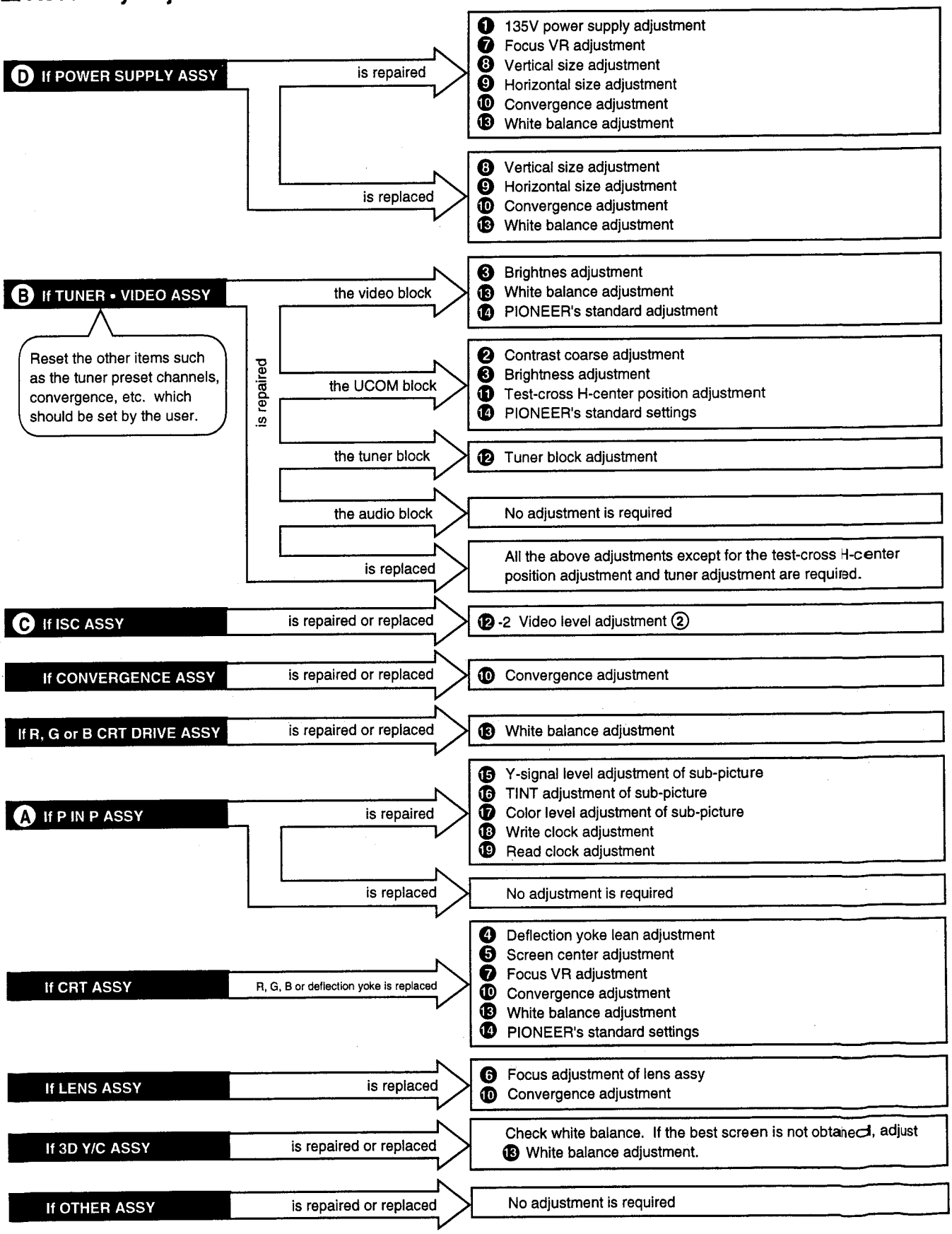
SERVICEMAN WARNING
Before removing the anode cable, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.



Note:
When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

❶ 135V Power supply adjustment
❷ Contrast coarse adjustment
❸ Brightness adjustment (PIONEER's standared settings)
❹ Deflection yoke lean adjustment
❺ Screen center adjustment
❻ Focus adjustment of lens assy
❼ Focus VR adjustment
❽ Vertical size adjustment
❾ Horizontal size adjustment
❿ Convergence adjustment
⓫ Test cross H-Center position assy
⓬ Tuner block adjustment
⓭ White balance adjustment
⓮ PIONEER's standard settings
⓯ Y-signal level adjustment of sub-picture (adjustment for P IN P)
⓰ Tint adjustment of sub-picture (adjustment for P IN P)
⓱ Color level adjustment of sub-picture (adjustment for P IN P)
⓲ Write clock adjustment of sub-picture (adjustment for P IN P)
⓳ Read clock adjustment of sub-picture (adjustment for P IN P)

■ Assembly Adjustment Location Guide



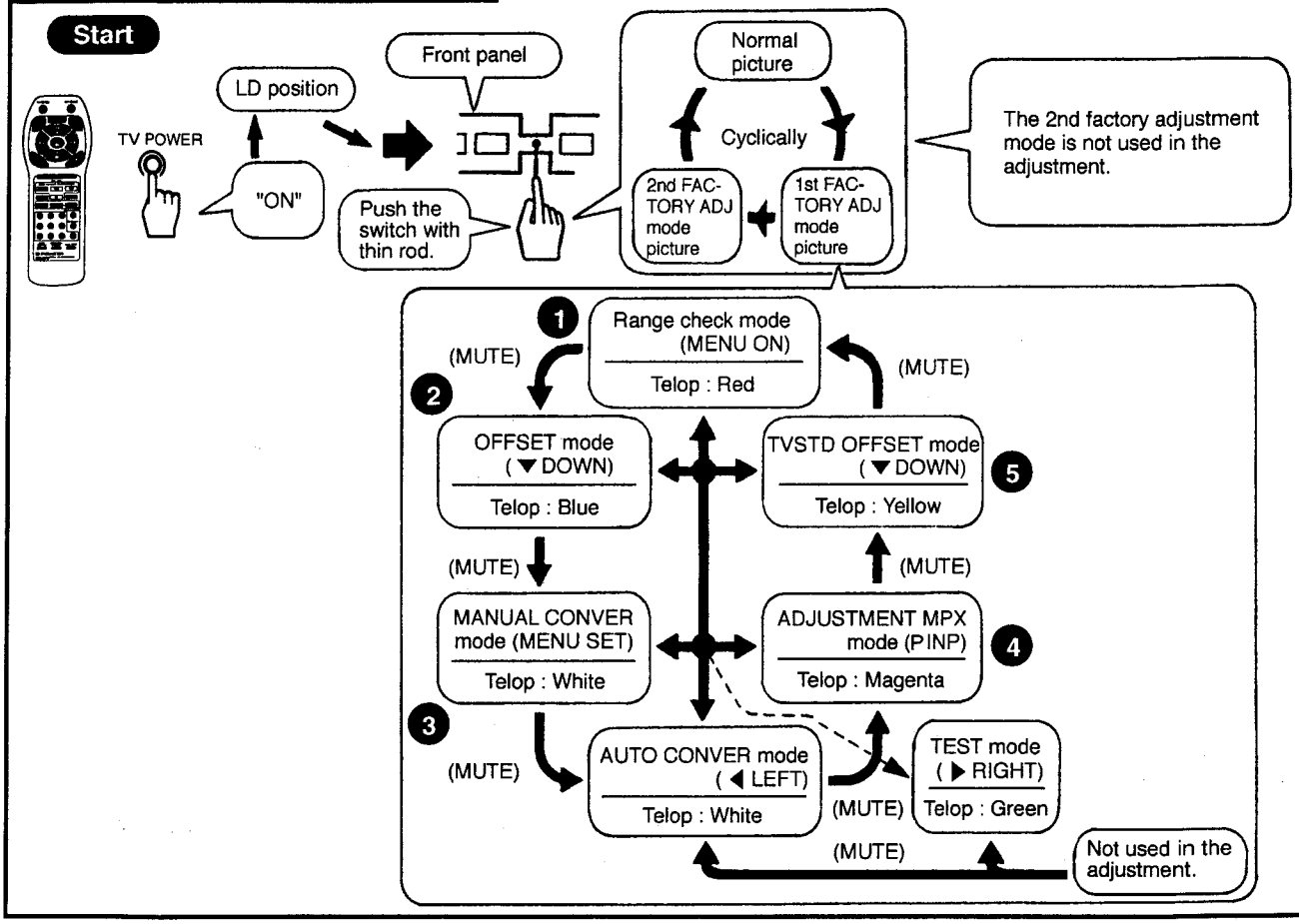
■ Factory ADJ Mode

Start ..... Start adjusting

1st FAC ..... Select 1st factory adjustment mode, then adjust.

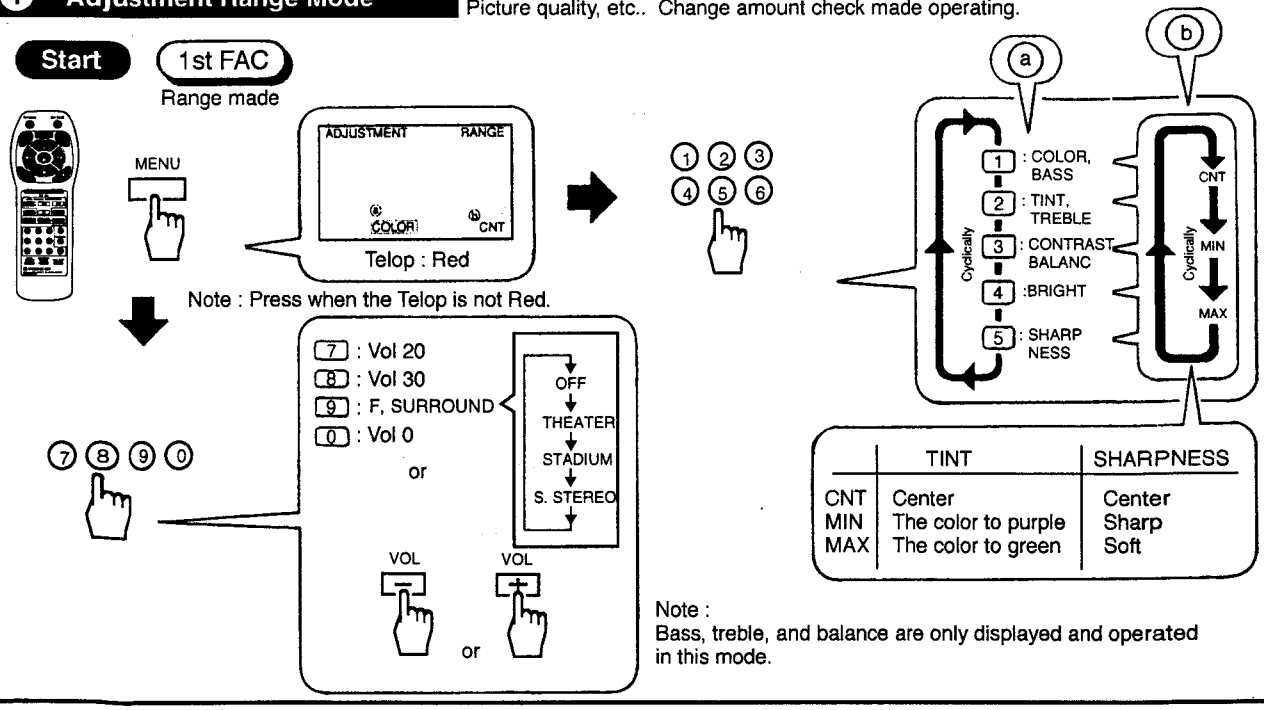
Select 1st FACTORY ADJ Mode

Selecting the mode for adjustment operations.



1 Adjustment Range Mode

Picture quality, etc.. Change amount check made operating.

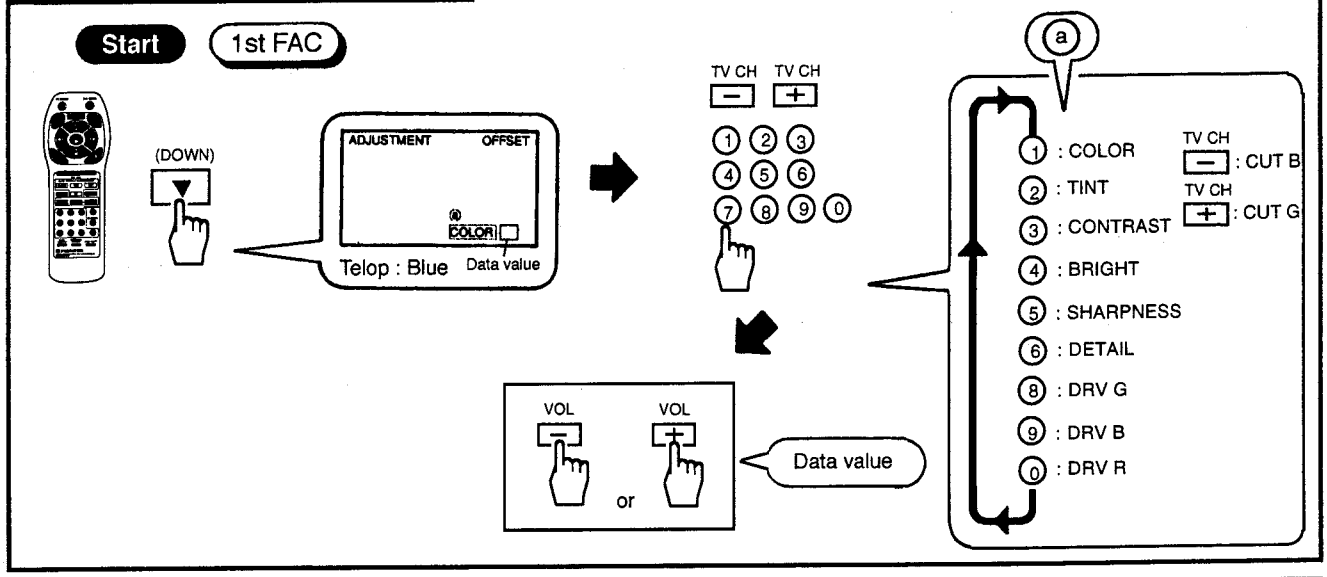


	TINT	SHARPNESS
CNT	Center	Center
MIN	The color to purple	Sharp
MAX	The color to green	Soft

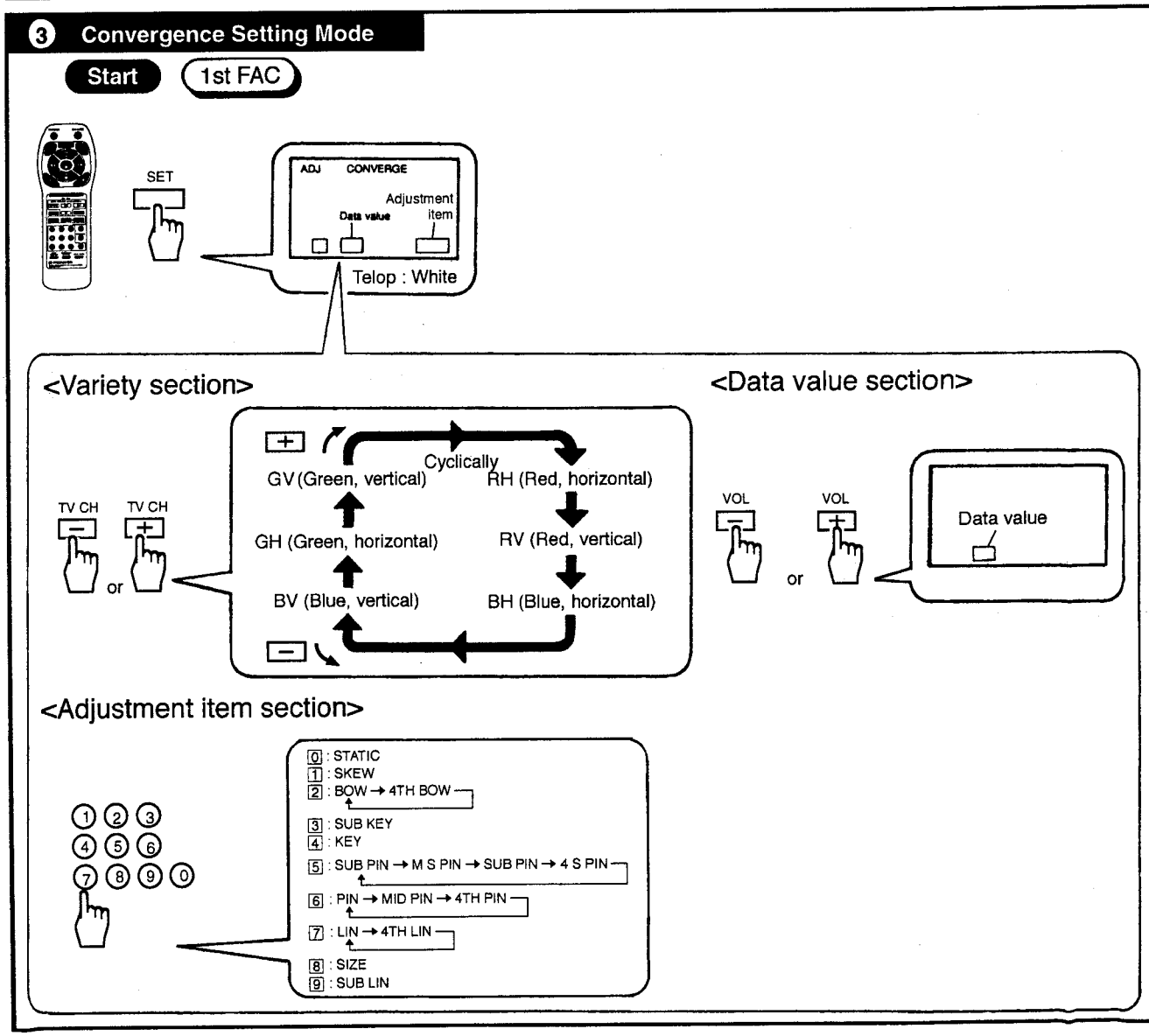
Note :
Bass, treble, and balance are only displayed and operated in this mode.

② Adjustment OFFSET Mode

This mode is to set the standard picture quality for a normal picture.

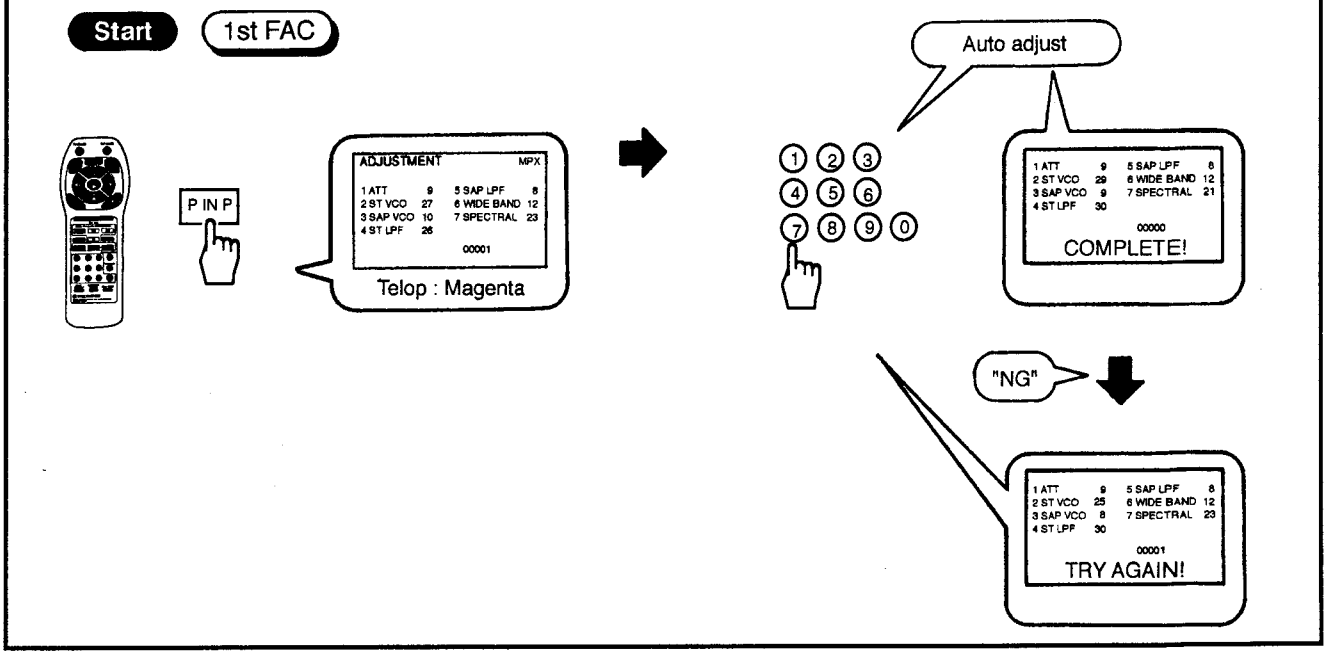


③ Convergence Setting Mode

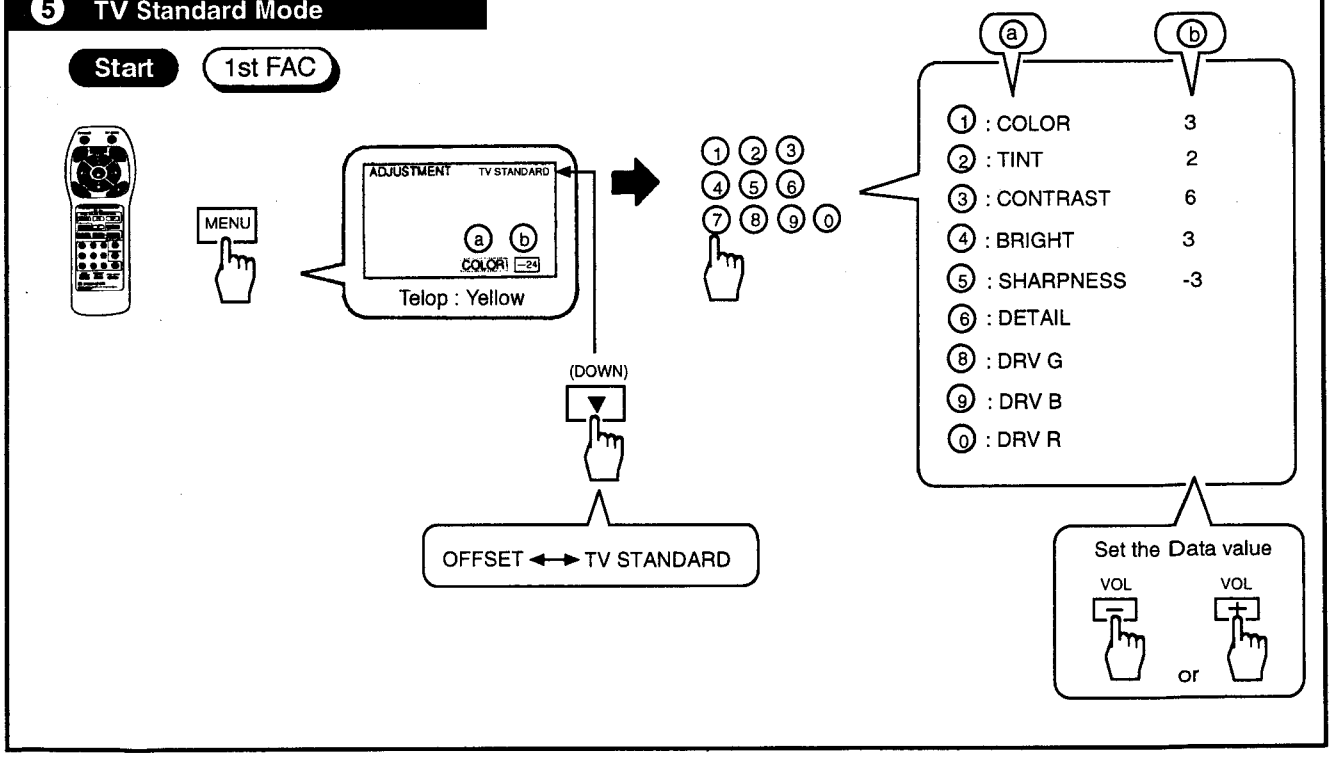


4 Adjustment MPX Mode

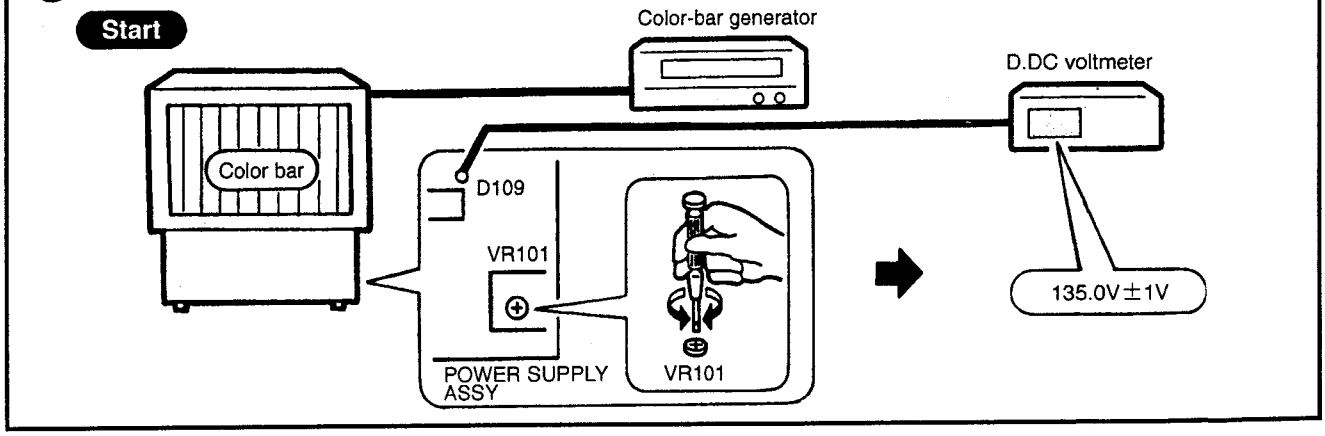
For adjusting the TV tuner MPX decoder section



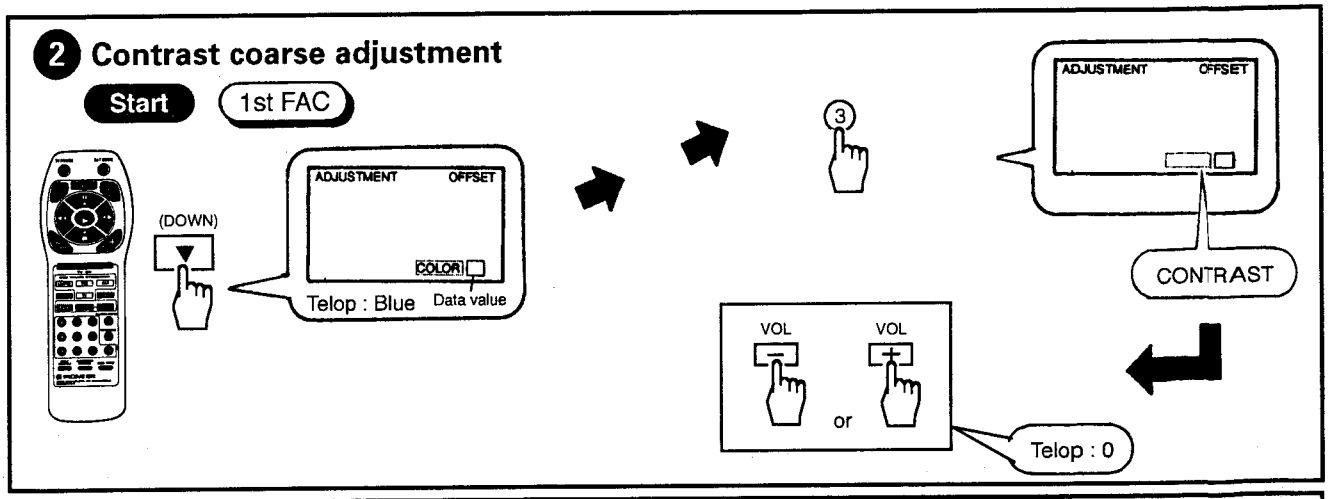
5 TV Standard Mode



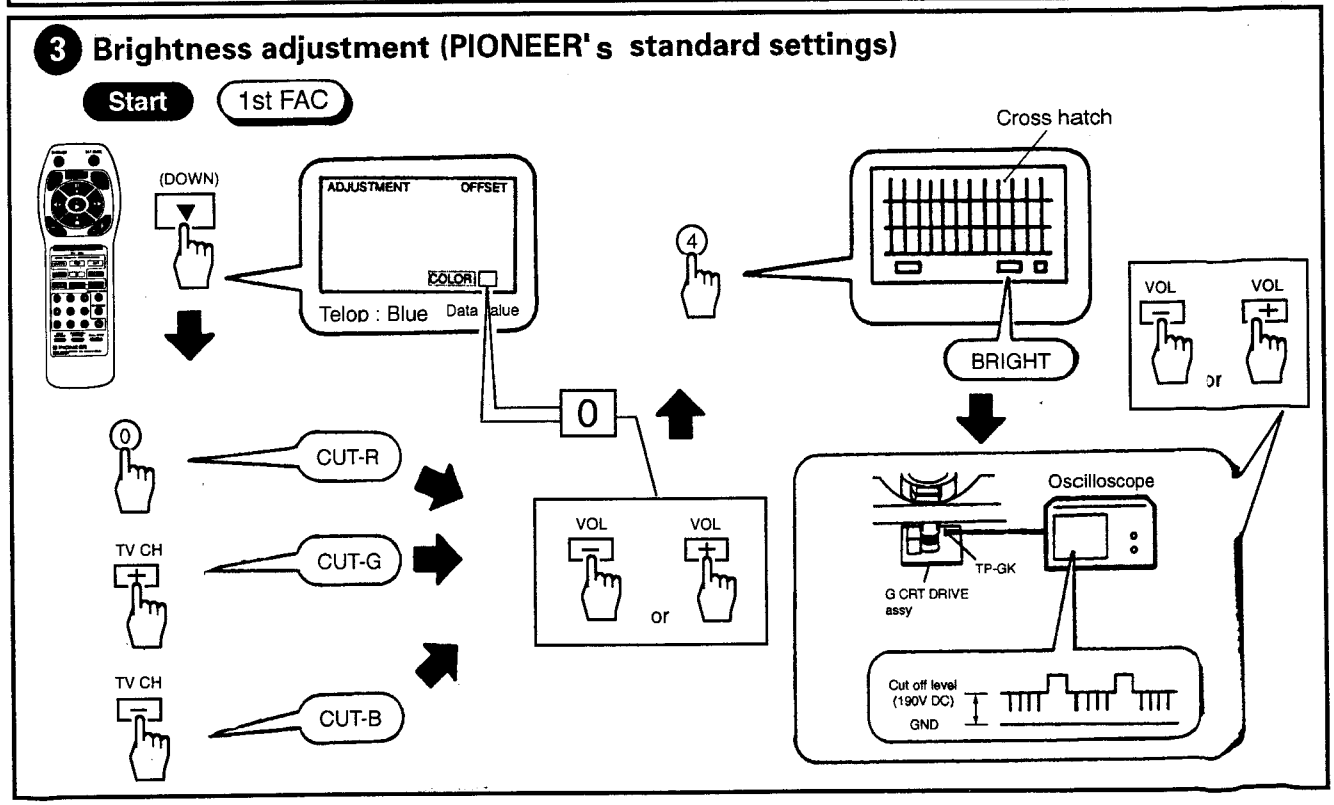
1 135V Power supply adjustment



2 Contrast coarse adjustment

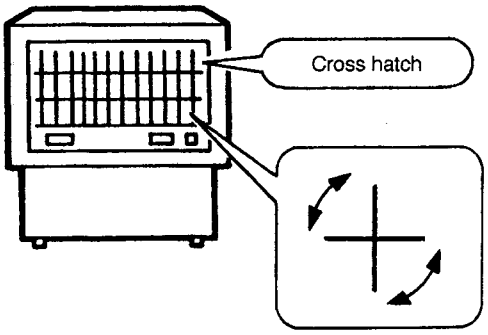


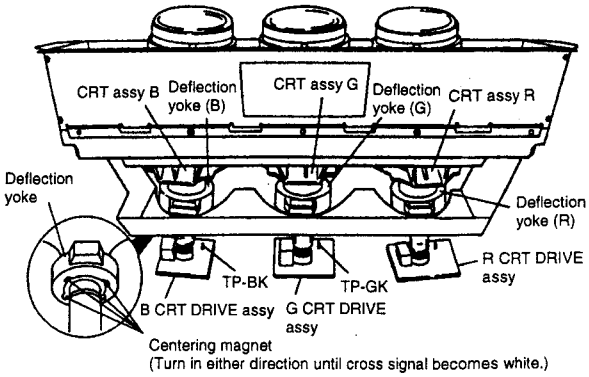
3 Brightness adjustment (PIONEER's standard settings)



4 Deflection yoke lean adjustment

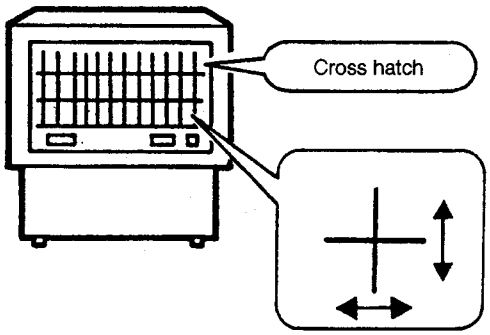
Start



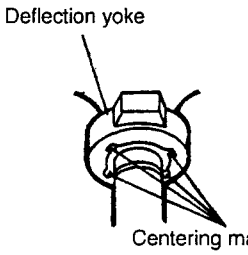


5 Screen center adjustment

Start

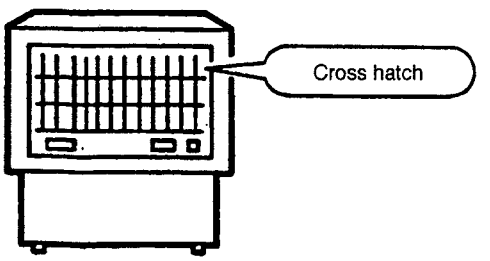


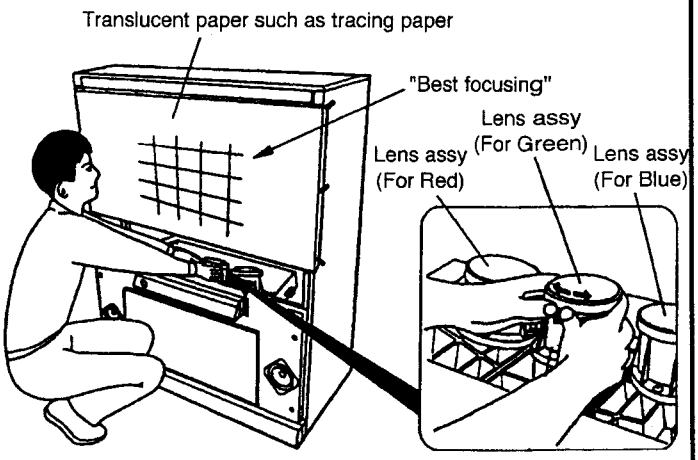
- For Red or Blue adjustment, turn 1st FACTORY ADJ mode ON and then OFF to place the convergence POSITION at the center of the adjustable range.
- Move the centering magnet of the deflection yoke for the replaced color so that the horizontal and vertical lines at the center of the screen align with the lines for a color not replaced.



6 Focus adjustment of lens assy

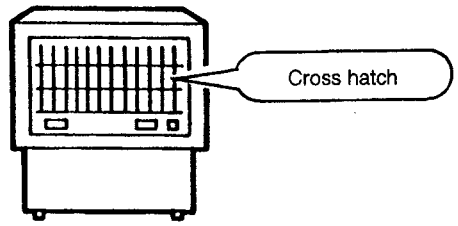
Start

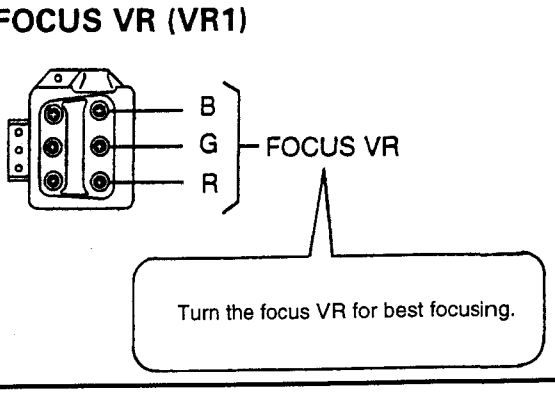




7 Focus VR adjustment

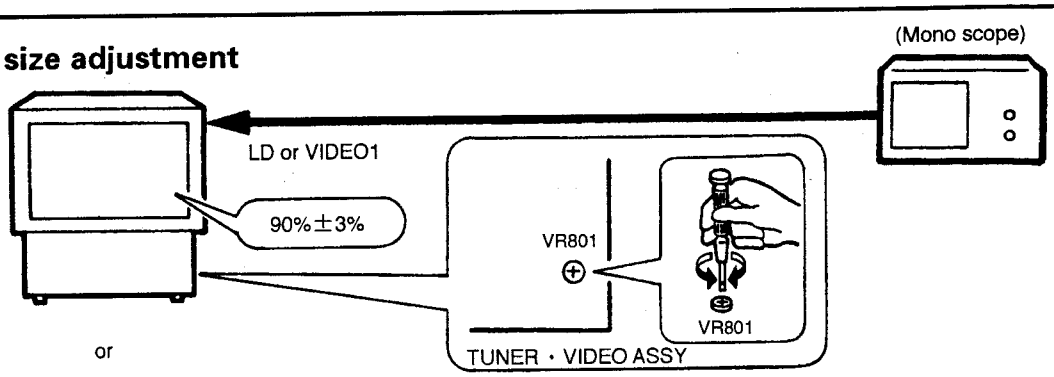
Start



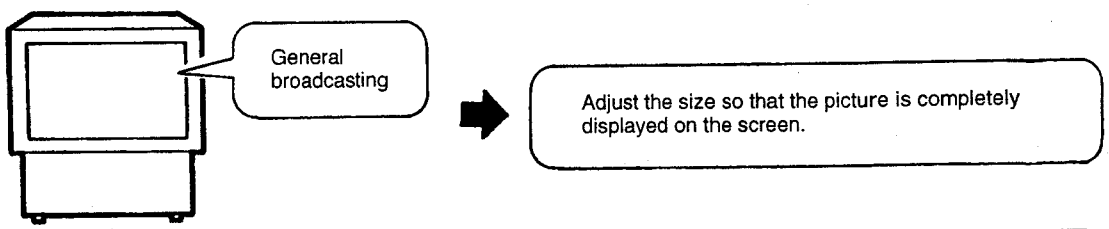


8 Vertical size adjustment

Start

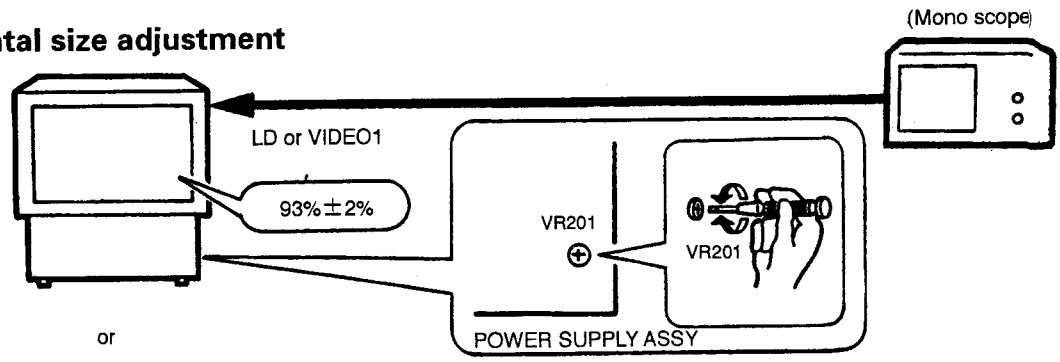


or

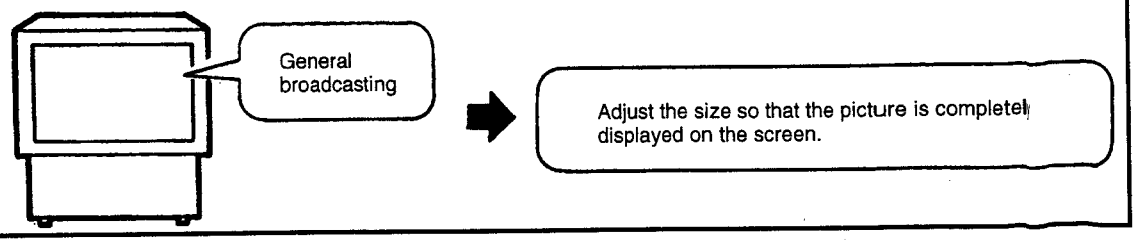


9 Horizontal size adjustment

Start



or



⑩ Convergence adjustment

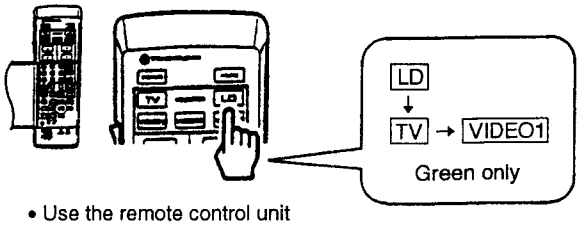
⑩-1 Green line adjustment (1st FAC)

- Adjustment in the horizontal direction

Note :
The convergence for this device must be adjusted for each screen size normal cinema and full cinema.

Start

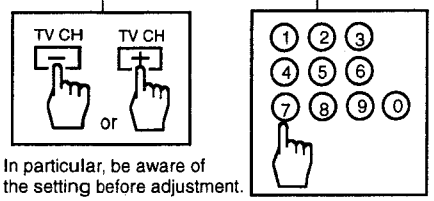
- See ③ Convergence Setting Mode in the Factory ADJ mode.
- Input cross-hatch signals to this device's video input terminal.



- Use the remote control unit CU-SD076 for servicing.

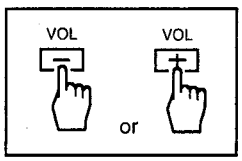
• Select the Adjustment item

GH - STATIC



In particular, be aware of the setting before adjustment.

• Adjust the Data value

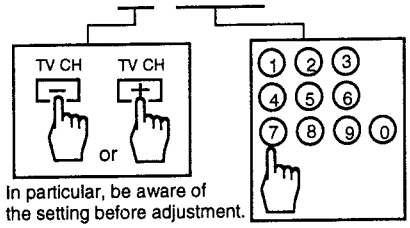


Note :
- Repeat the adjustments until you attain the optimum state.
- Fine-adjust over the entire picture to obtain the optimum picture.
- If the adjustment is not possible within the range of 010 to - 010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust H-STATIC.

Adjustment Item		Cross-hatch Picture: Deviated	Cross-hatch Picture: Optimum	Cross-hatch Picture: Deviated	Adjustment Point
Center-line Adjustment	GH - STATIC		Attention point		Move the center vertical line at the center of the screen.
	GH - SKEW		Attention point		Adjust so that the center vertical line is not leaned.
	GH - BOW		Attention point		Adjust so that the bowed center vertical line at the center of the screen to a straight line.
	GH - 4TH BOW		Attention point		Adjust so that the wavy center vertical line at the center of the screen to a straight line.
Lean Adjustment	GH - SUB KEY		Attention point		Adjust so that the vertical lines in the right and left sections of the screen are not leaned.
	GH - KEY		Attention point		

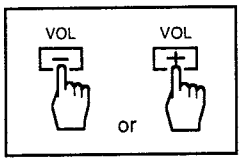
• **Select the Adjustment item**

GH - SUB PIN

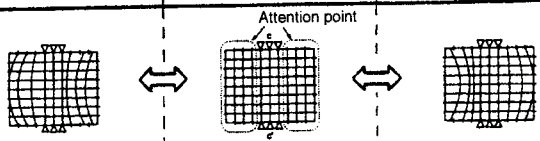
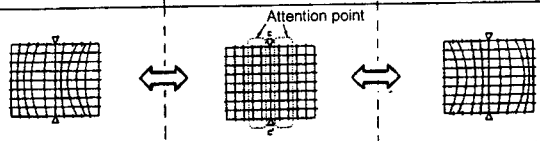
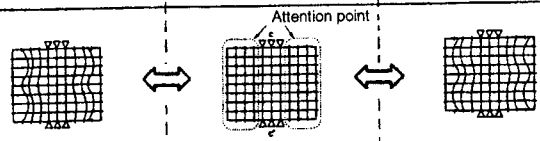
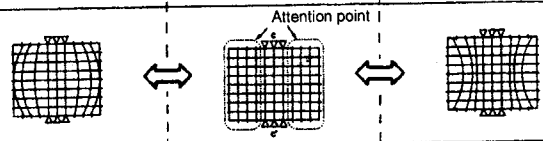
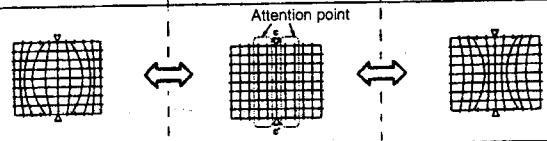
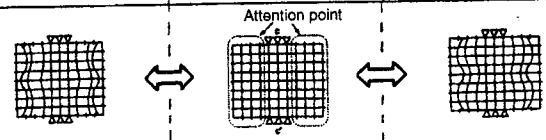
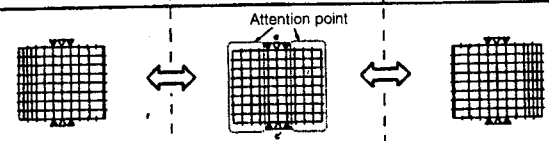
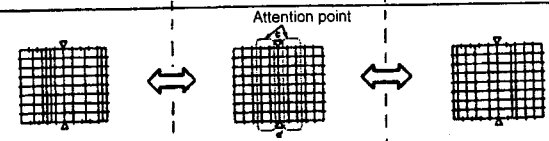
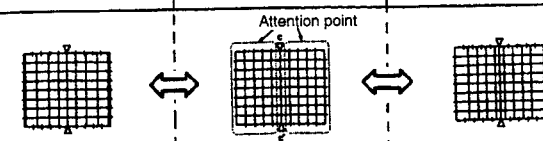
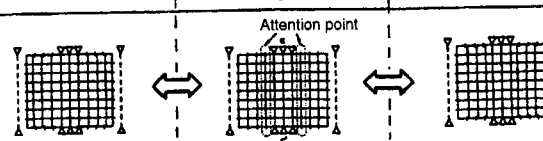


In particular, be aware of the setting before adjustment.

• **Adjust the Data value**



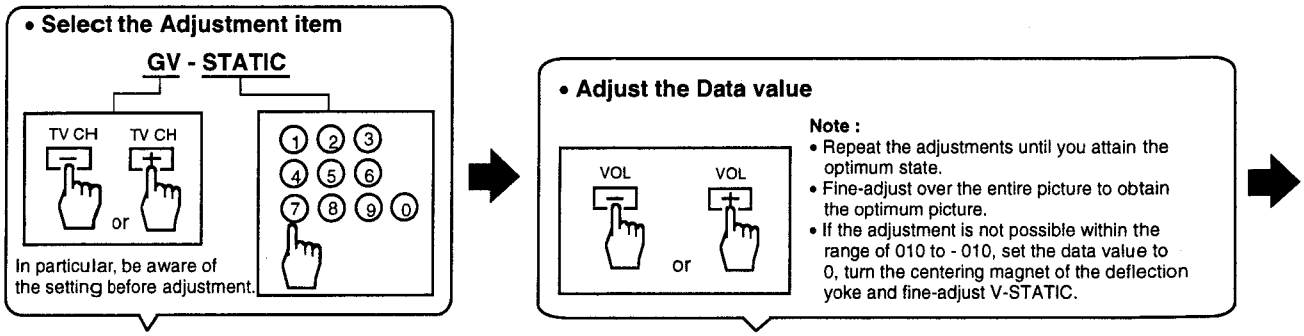
Note :
- Repeat the adjustments until you attain the optimum state.
- Fine-adjust over the entire picture to obtain the optimum picture.
- If the adjustment is not possible within the range of 010 to - 010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust H-STATIC.

Adjustment Item		Cross-hatch Picture			Adjustment Point
		Deviated	Optimum	Deviated	
Distortion Adjustment	GH - SUB PIN				Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
	GH - MS PIN				
	GH - 4S PIN				
	GH - PIN				
	GH - MID PIN				
	GH - 4TH PIN				
Line-interval Adjustment	GH - LIN				Adjust so that the intervals of the vertical lines in the right and left sections of the screen are symmetrically and correct the size.
	GH - 4TH LIN				
	GH - SIDE				
	GH - SUB LIN				

10-2 Green line adjustment (1st FAC)

• Adjustment in the vertical direction

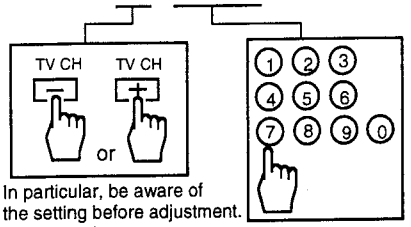
Start



Adjustment Item		Cross-hatch Picture: Deviated	Cross-hatch Picture: Optimum	Cross-hatch Picture: Deviated	Adjustment Point
Center-line Adjustment	GV - STATIC		Attention point		Move the center horizontal line at the center of the screen.
	GV - SKEW		Attention point		Adjust so that the center horizontal line is not leaned.
	GV - BOW		Attention point		Adjust so that the bowed center horizontal line at the center of the screen to a straight line.
Lean Adjustment	GV- SUB KEY		Attention point, Attention point		Adjust so that the horizontal lines in the upper and lower sections of the screen are not leaned.
	GV - KEY		Attention point, Attention point		
	GV - MID KEY		Attention point, Attention point		

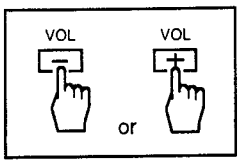
• **Select the Adjustment item**

GV - SUB PIN

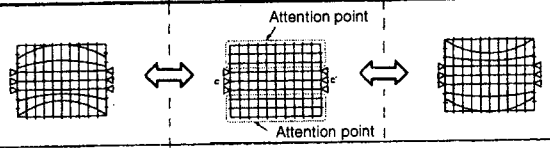
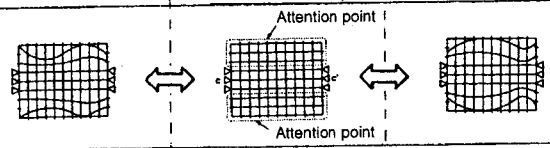
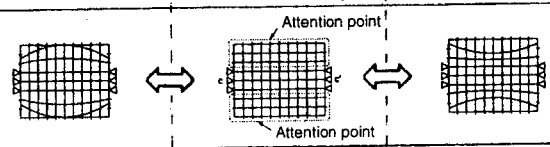
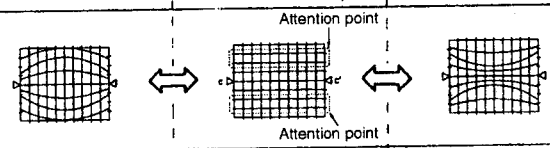
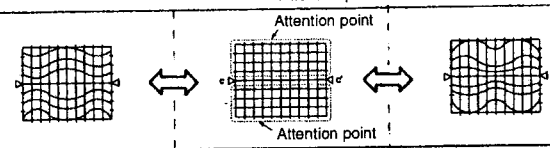
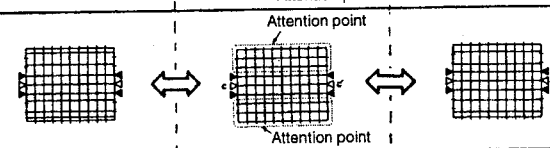
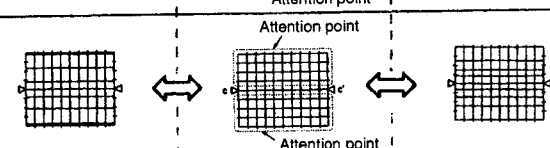
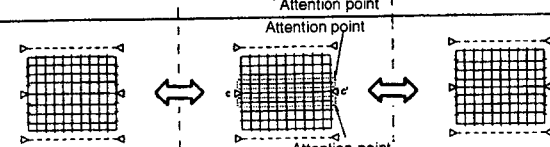


In particular, be aware of the setting before adjustment.

• **Adjust the Data value**



Note :
- Repeat the adjustments until you attain the optimum state.
- Fine-adjust over the entire picture to obtain the optimum picture.
- If the adjustment is not possible within the range of 010 to - 010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust V-STATIC.

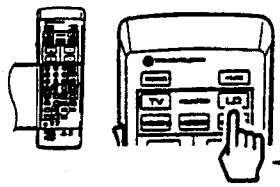
Adjustment Item		Cross-hatch Picture: Deviated / Optimum / Deviated	Adjustment Point
Distortion Adjustment	GV - SUB PIN		Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
	GV - SC PIN		
	GV - PIN		
	GV - MID PIN		
	GV - 4TH PIN		
Line-interval Adjustment	GV - LIN		Adjust so that the intervals of the horizontal lines in the upper and lower sections of the screen are symmetrically and correct the size.
	GV - SIZE		
	GV - SUB LIN		

⑩ -3 Red line adjustment (1st FAC)

• Adjustment in the horizontal direction

Start

• See ③ Convergence Setting Mode in the Factory ADJ mode.
• Input cross-hatch signals to this device's video input terminal.

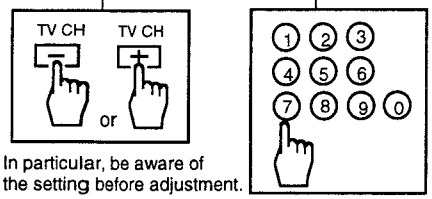


→ TV
Green + Red

• Use the remote control unit CU-SD076 for servicing.

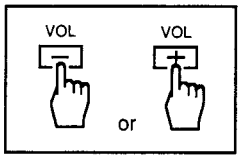
• Select the Adjustment item

RH - STATIC

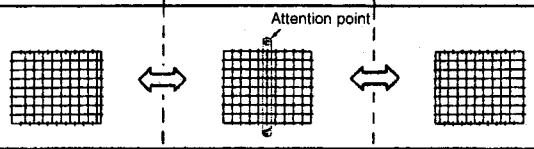
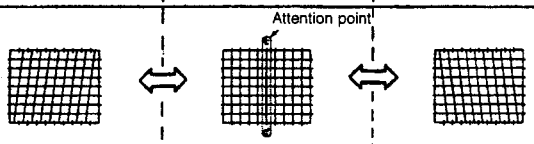
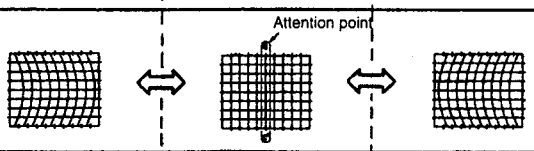
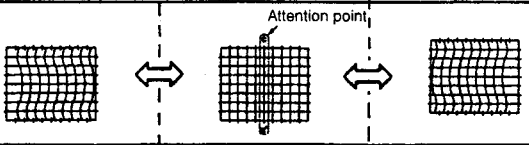
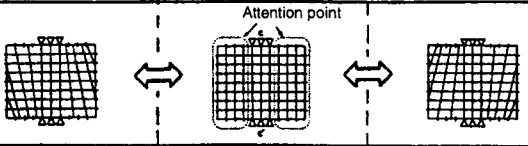
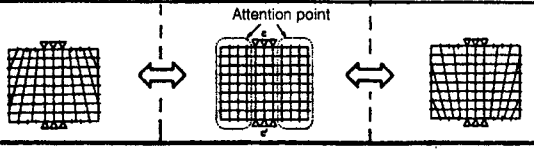


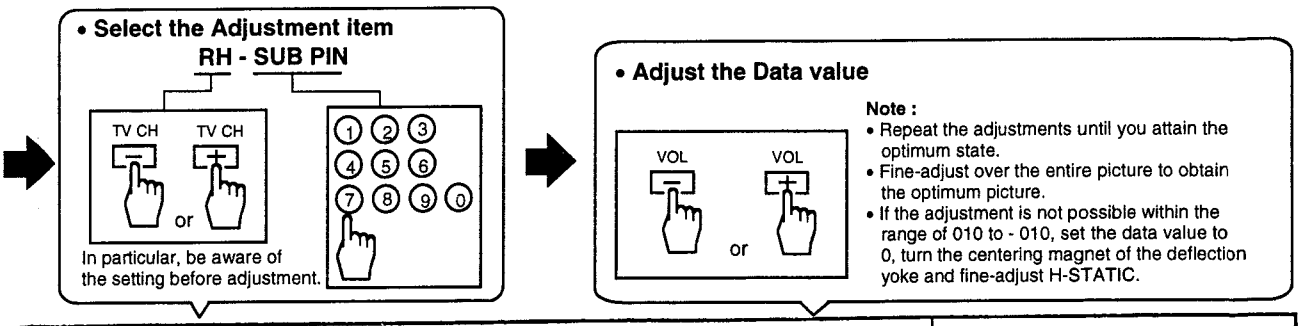
In particular, be aware of the setting before adjustment.

• Adjust the Data value



Note :
• Repeat the adjustments until you attain the optimum state.
• Fine-adjust over the entire picture to obtain the optimum picture.
• If the adjustment is not possible within the range of 010 to - 010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust H-STATIC.

Adjustment Item		Cross-hatch Picture: Deviated / Optimum / Deviated	Adjustment Point
Center-line Adjustment	RH - STATIC		Converge the center vertical line in the green vertical line.
	RH - SKEW		Adjust so that the center vertical line is not leaned.
	RH - BOW		Adjust so that the bowed center vertical line at the center of the screen to a straight line.
	RH - 4TH BOW		Adjust so that the wavy center vertical line at the center of the screen to a straight line.
Lean Adjustment	RH - SUB KEY		Adjust so that the vertical lines in the right and left sections of the screen are not leaned.
	RH - KEY		

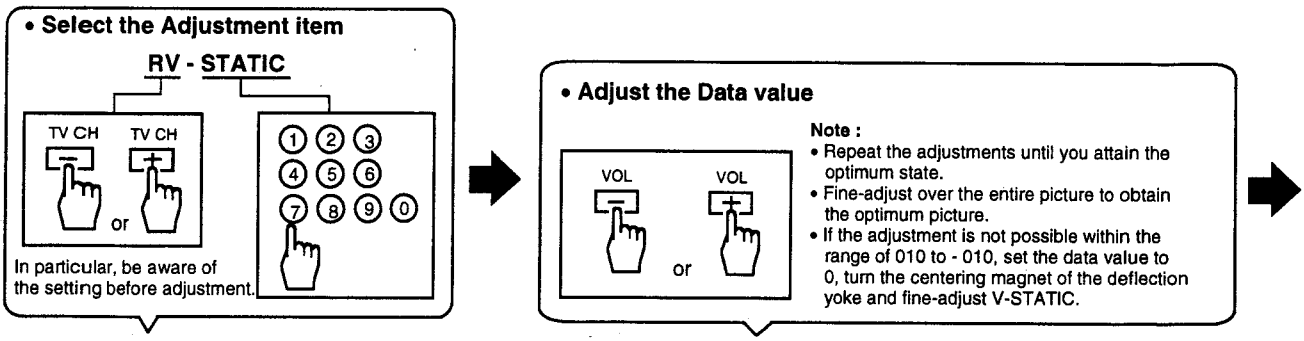


Adjustment Item		Cross-hatch Picture			Adjustment Point
		Deviated	Optimum	Deviated	
Distortion Adjustment	RH - SUB PIN		Attention point		Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
	RH - MS PIN		Attention point		
	RH - 4S PIN		Attention point		
	RH - PIN		Attention point		
	RH - MID PIN		Attention point		
	RH - 4TH PIN		Attention point		
Line-interval Adjustment	RH - LIN		Attention point		Adjust so that the intervals of the vertical lines in the right and left sections of the screen are symmetrically and converge them in the green vertical lines.
	RH - 4TH LIN		Attention point		
	RH - SIDE		Attention point		
	RH - SUB LIN		Attention point		

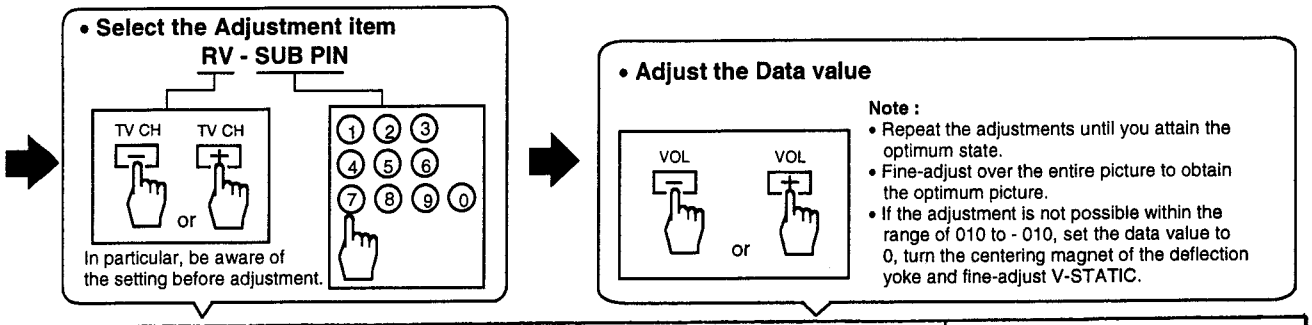
⑩-4 Red line adjustment (1st FAC)

- Adjustment in the vertical direction

Start



Adjustment Item		Cross-hatch Picture: Deviated / Optimum / Deviated	Adjustment Point
Center-line Adjustment	RV - STATIC	Attention point	Converge the center horizontal line in the green horizontal line.
	RV - SKEW	Attention point	Adjust so that the center horizontal line is not leaned.
	RV - BOW	Attention point	Adjust so that the bowed center horizontal line at the center of the screen to a straight line.
Lean Adjustment	RV- SUB KEY	Attention point / Attention point	Adjust so that the horizontal lines in the upper and lower sections of the screen are not leaned.
	RV - KEY	Attention point / Attention point	
	RV - MID KEY	Attention point / Attention point	



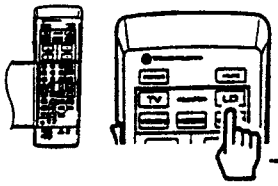
Adjustment Item		Cross-hatch Picture			Adjustment Point
		Deviated	Optimum	Deviated	
Distortion Adjustment	RV - SUB PIN		Attention point / Attention point		Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
	RV - SC PIN		Attention point / Attention point		
	RV - PIN		Attention point / Attention point		
	RV - MID PIN		Attention point / Attention point		
	RV - 4TH PIN		Attention point / Attention point		
Line-interval Adjustment	RV - LIN		Attention point / Attention point		Adjust so that the intervals of the horizontal lines in the upper and lower sections of the screen are symmetrically and converge them in the green horizontal lines.
	RV - SIZE		Attention point / Attention point		
	RV - SUB LIN		Attention point / Attention point		

⑩-5 Blue line adjustment (1st FAC)

• Adjustment in the horizontal direction

Start

• See ③ Convergence Setting Mode in the Factory ADJ mode.
• Input cross-hatch signals to this device's video input terminal.

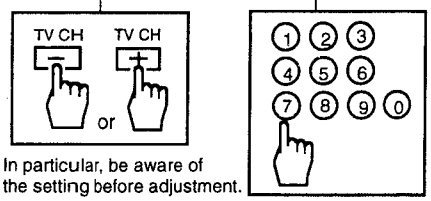


To output
Green + Red + Blue

• Use the remote control unit CU-SD076 for servicing.

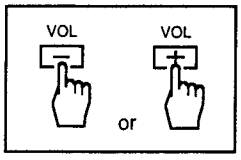
• Select the Adjustment item

BH - STATIC



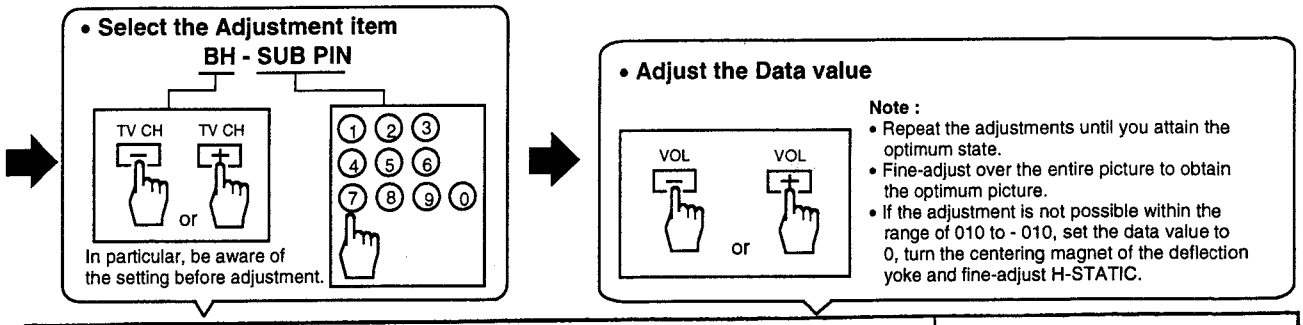
In particular, be aware of the setting before adjustment.

• Adjust the Data value



Note :
• Repeat the adjustments until you attain the optimum state.
• Fine-adjust over the entire picture to obtain the optimum picture.
• If the adjustment is not possible within the range of 010 to - 010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust H-STATIC.

Adjustment Item		Cross-hatch Picture: Deviated / Optimum / Deviated	Adjustment Point
Center-line Adjustment	BH - STATIC	Attention point	Converge the center vertical line in the green vertical line.
	BH - SKEW	Attention point	Adjust so that the center vertical line is not leaned.
	BH - BOW	Attention point	Adjust so that the bowed center vertical line at the center of the screen to a straight line.
	BH - 4TH BOW	Attention point	Adjust so that the wavy center vertical line at the center of the screen to a straight line.
Lean Adjustment	BH - SUB KEY	Attention point	Adjust so that the vertical lines in the right and left sections of the screen are not leaned.
	BH - KEY	Attention point	

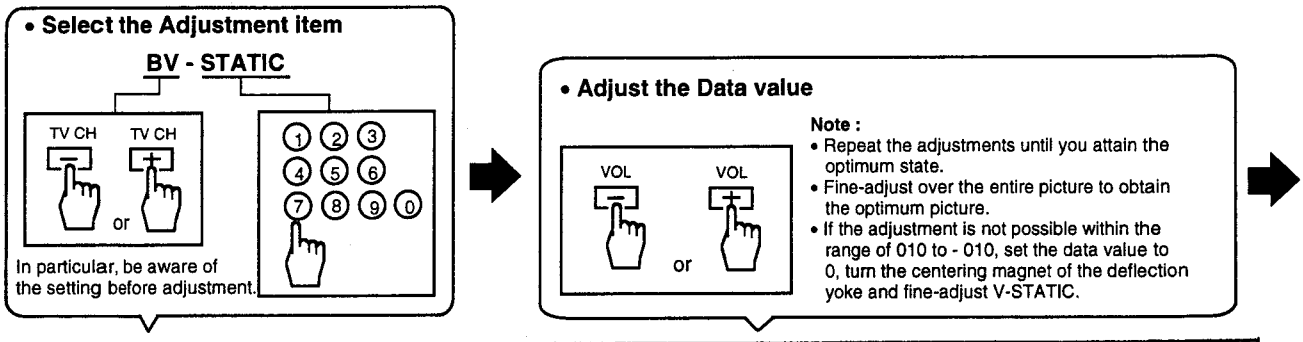


Adjustment Item		Cross-hatch Picture			Adjustment Point
		Deviated	Optimum	Deviated	
Distortion Adjustment	BH - SUB PIN		Attention point		Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
	BH - MS PIN		Attention point		
	BH - 4S PIN		Attention point		
	BH - PIN		Attention point		
	BH - MID PIN		Attention point		
	BH - 4TH PIN		Attention point		
Line-interval Adjustment	BH - LIN		Attention point		Adjust so that the intervals of the vertical lines in the right and left sections of the screen are symmetrically and converge them in the green vertical lines.
	BH - 4TH LIN		Attention point		
	BH - SIDE		Attention point		
	BH - SUB LIN		Attention point		

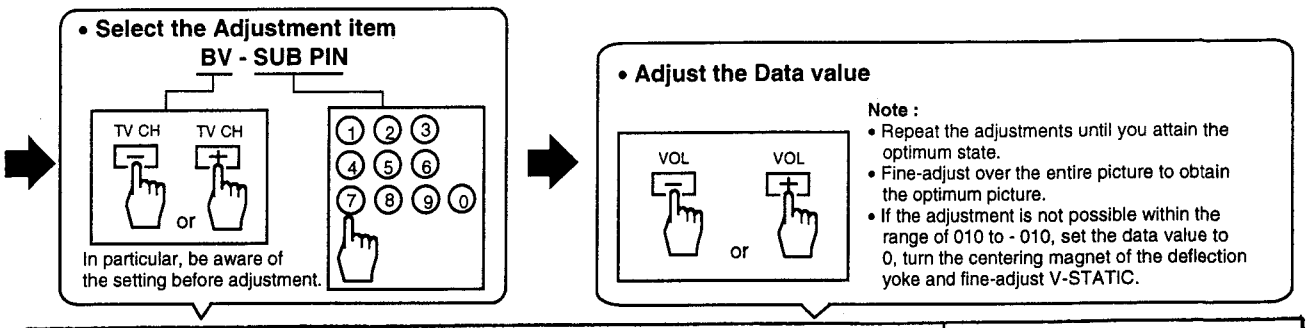
⑩-6 Blue line adjustment (1st FAC)

- Adjustment in the vertical direction

Start

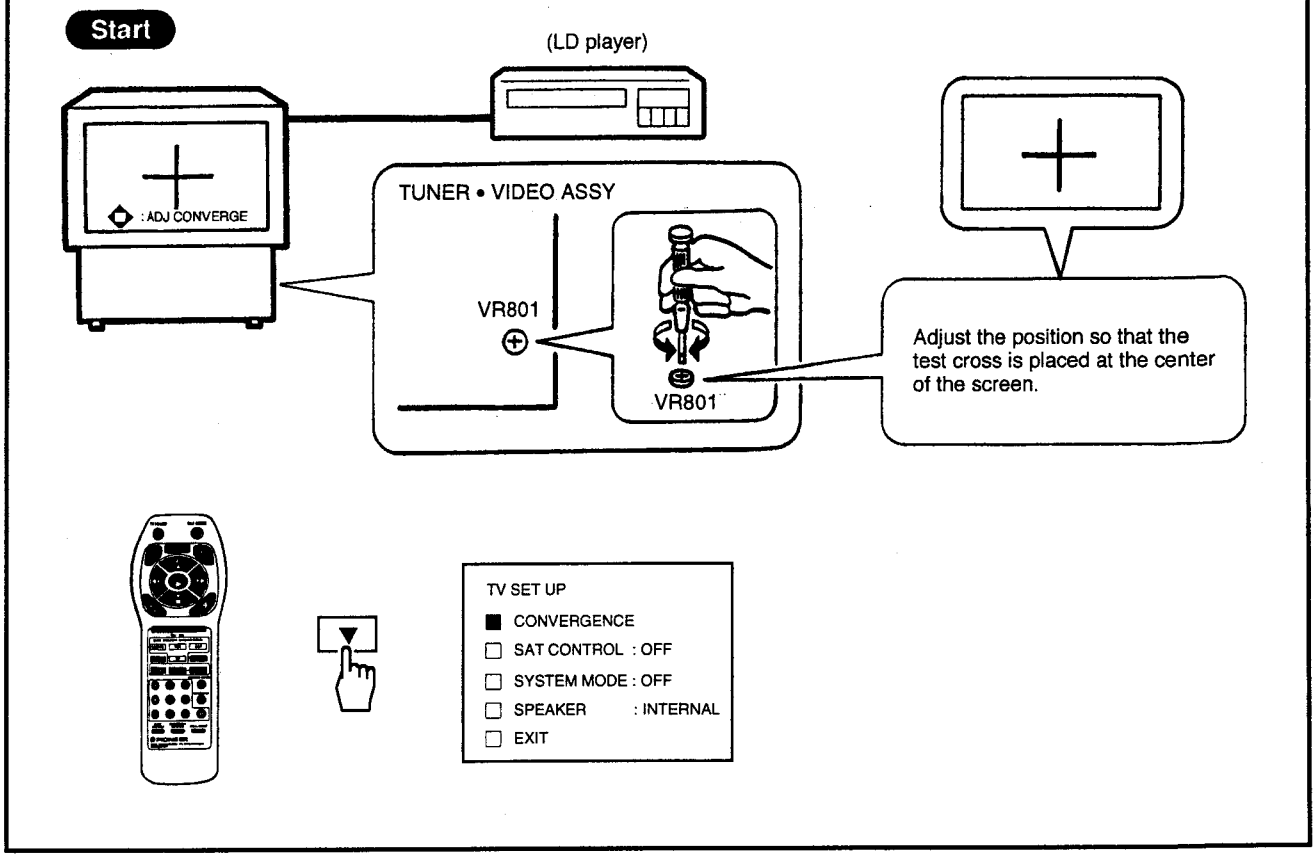


Adjustment Item		Cross-hatch Picture: Deviated / Optimum / Deviated	Adjustment Point
Center-line Adjustment	BV - STATIC	Attention point	Converge the center horizontal line in the green horizontal line.
	BV - SKEW	Attention point	Adjust so that the center horizontal line is not leaned.
	BV - BOW	Attention point	Adjust so that the bowed center horizontal line at the center of the screen to a straight line.
Lean Adjustment	BV- SUB KEY	Attention point / Attention point	Adjust so that the horizontal lines in the upper and lower sections of the screen are not leaned.
	BV - KEY	Attention point / Attention point	
	BV - MID KEY	Attention point / Attention point	



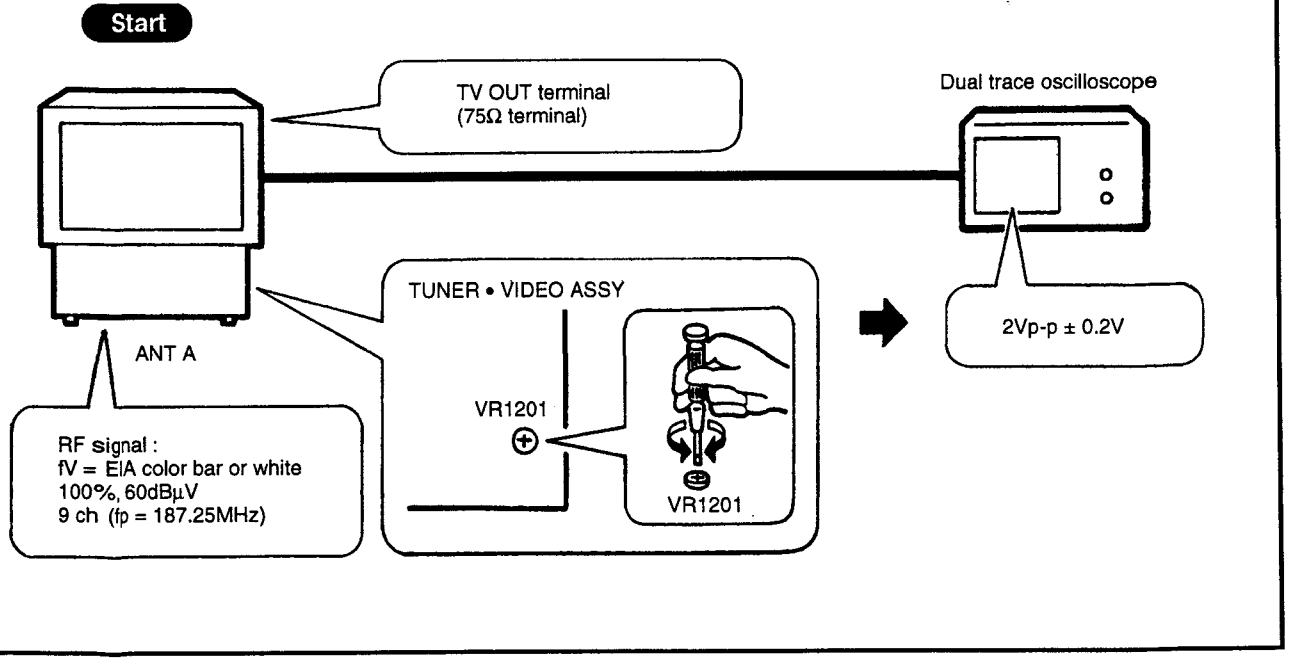
Adjustment Item		Cross-hatch Picture: Deviated	Cross-hatch Picture: Optimum	Cross-hatch Picture: Deviated	Adjustment Point
Distortion Adjustment	BV - SUB PIN		Attention point / Attention point		Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
	BV - SC PIN		Attention point / Attention point		
	BV - PIN		Attention point / Attention point		
	BV - MID PIN		Attention point / Attention point		
	BV - 4TH PIN		Attention point / Attention point		
Line-interval Adjustment	BV - LIN		Attention point / Attention point		Adjust so that the intervals of the horizontal lines in the upper and lower sections of the screen are symmetrically and converge them in the green horizontal lines.
	BV - SIZE		Attention point / Attention point		
	BV - SUB LIN		Attention point / Attention point		

11 Test cross H-center position adjustment

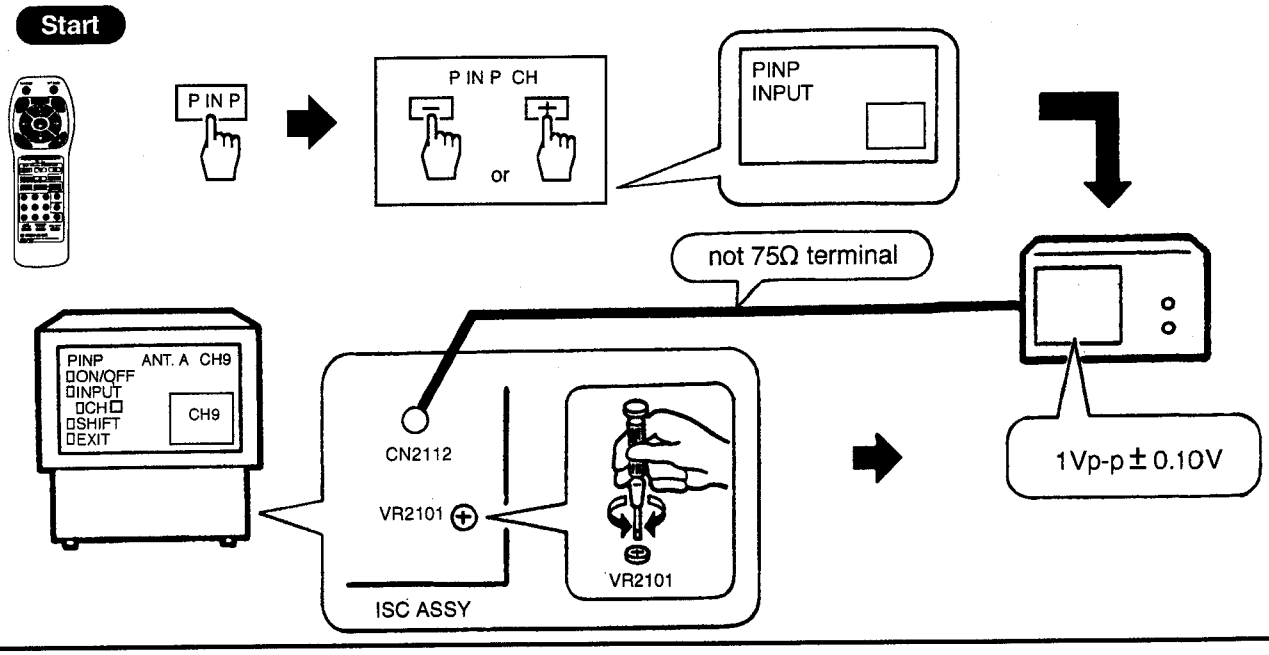


12 Tuner block adjustment

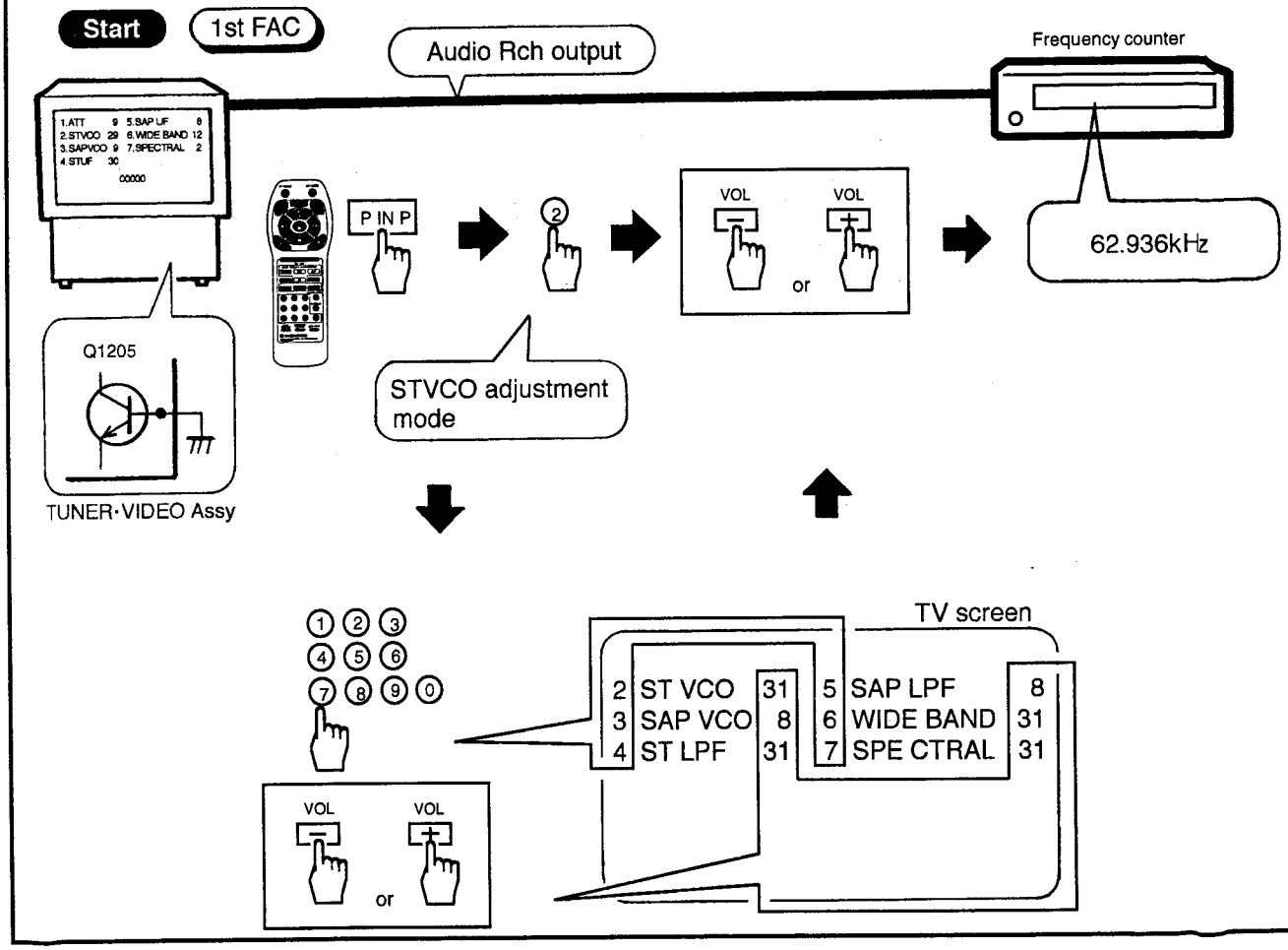
12 -1 Video level adjustment ①



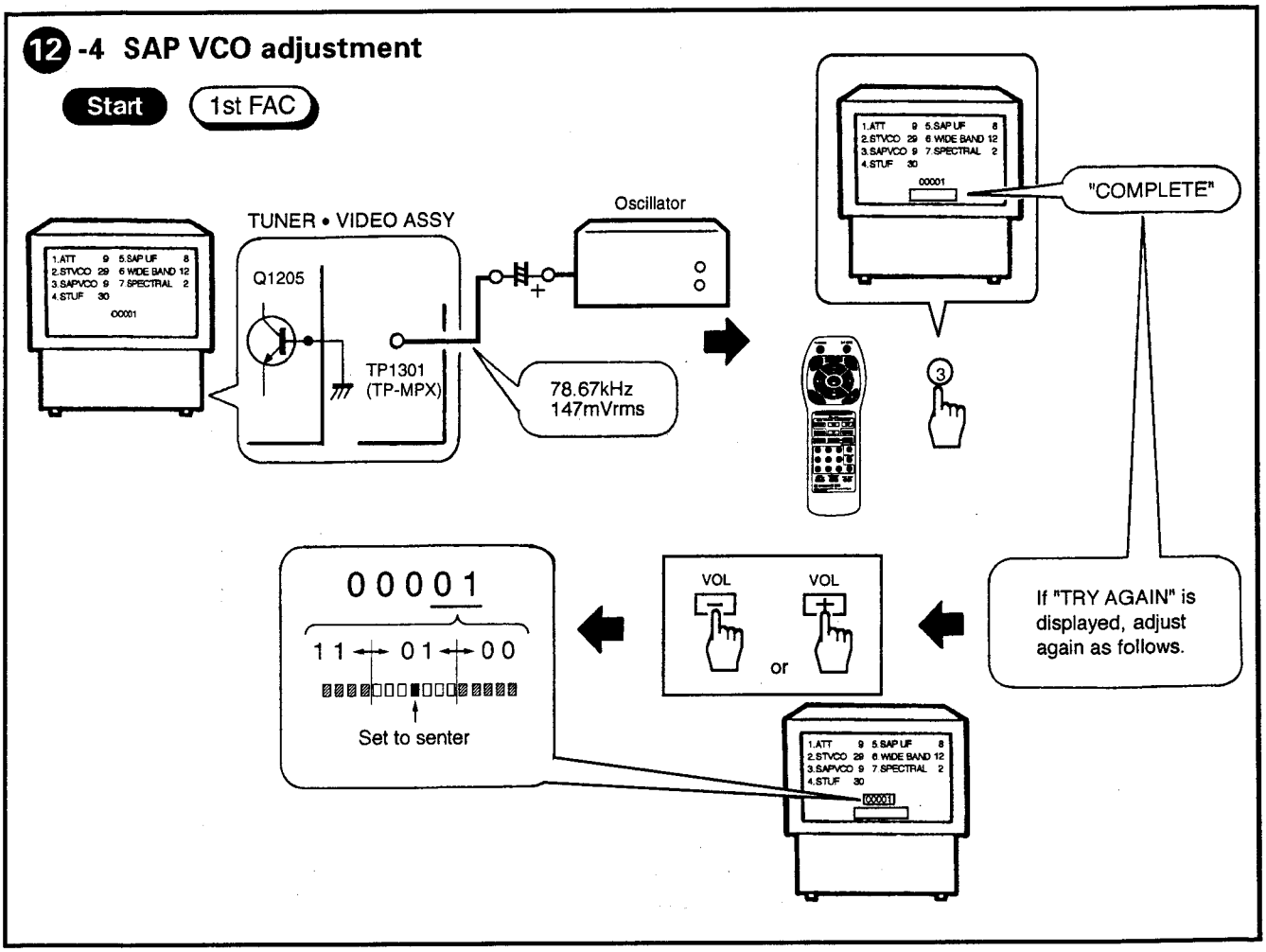
12-2 Video level adjustment ②



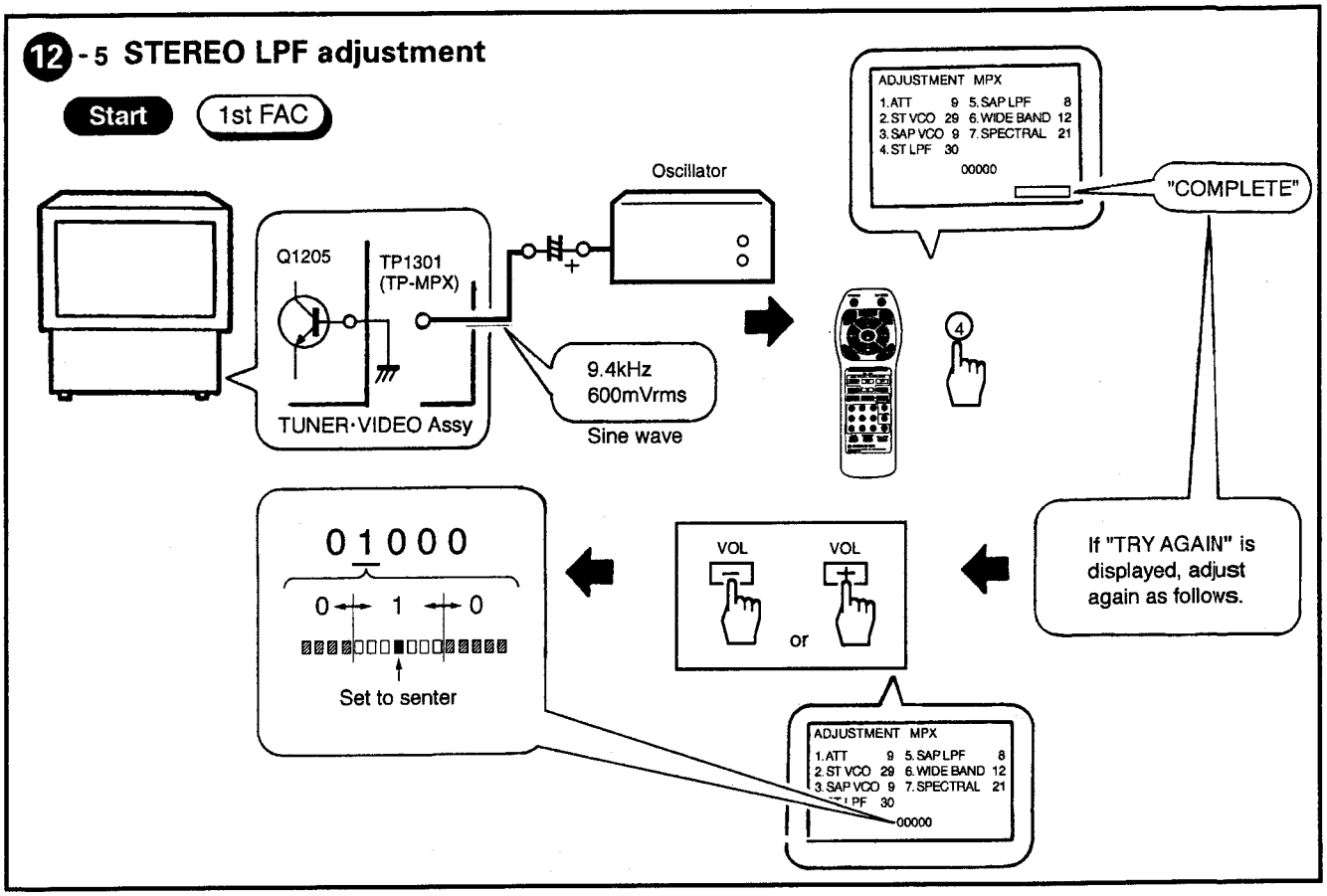
12-3 Stereo VCO adjustment



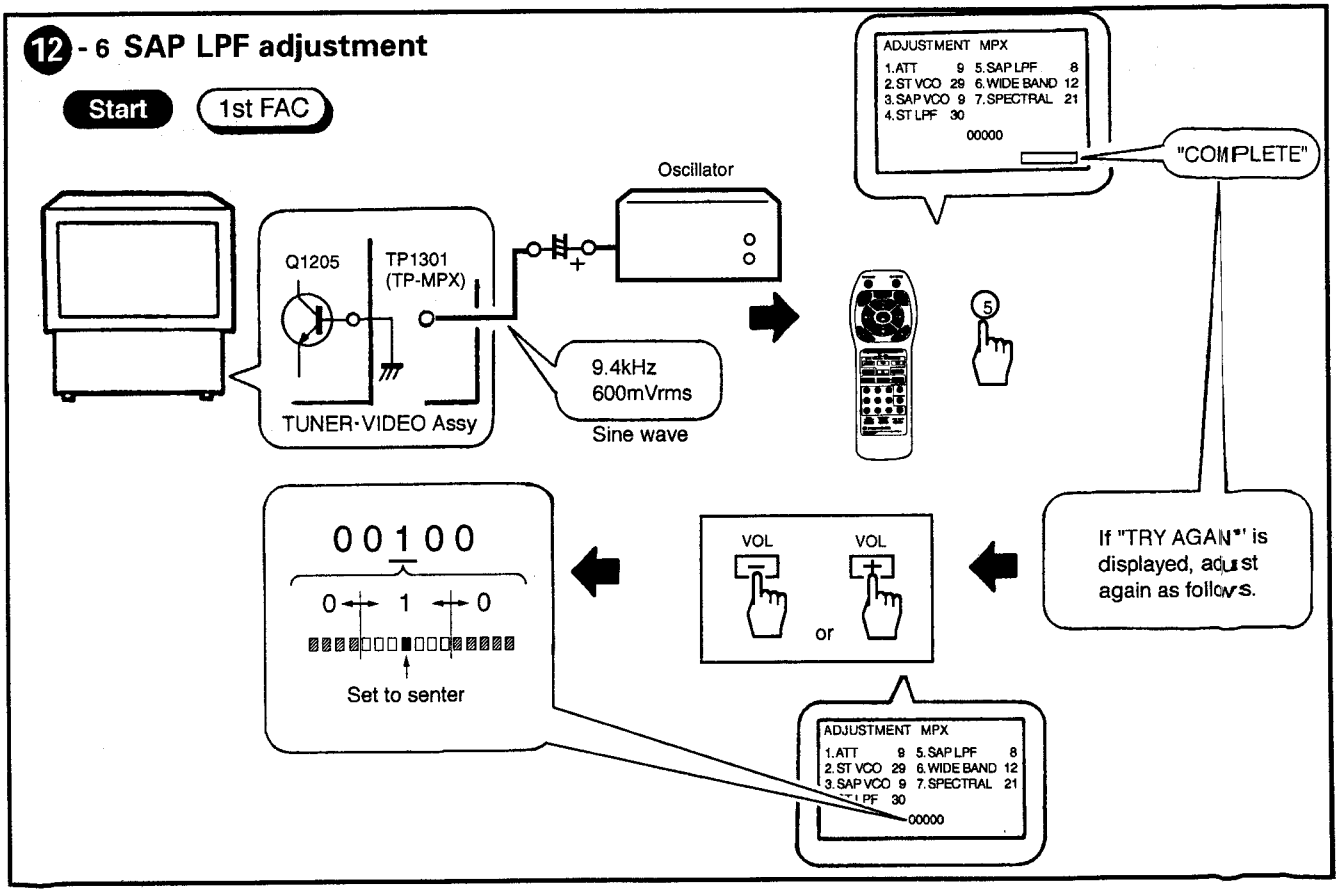
12 -4 SAP VCO adjustment



12-5 STEREO LPF adjustment

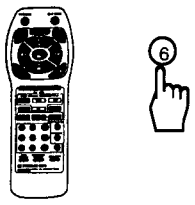


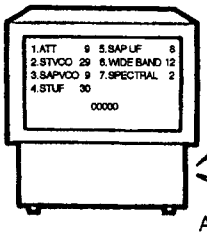
12-6 SAP LPF adjustment



⑫-7 Separation adjustment (WIDE BAND)

Start → 1st FAC





ANT A

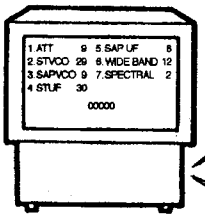
Adjust the output of the TV OUT terminal on the rear panel to the minimum level.

Rch level - Lch input → minimum
Lch level - Rch input → minimum

RF signal
Video signal : fV = EIA color-bar, 60dBμV
Audio signal : fA = 300Hz, 100% MOD,L ch (or R ch) only, 54dBμV
9 ch (fp = 187.25MHz)

⑫-8 Separation adjustment (SPECTRAL)

Start → 1st FAC



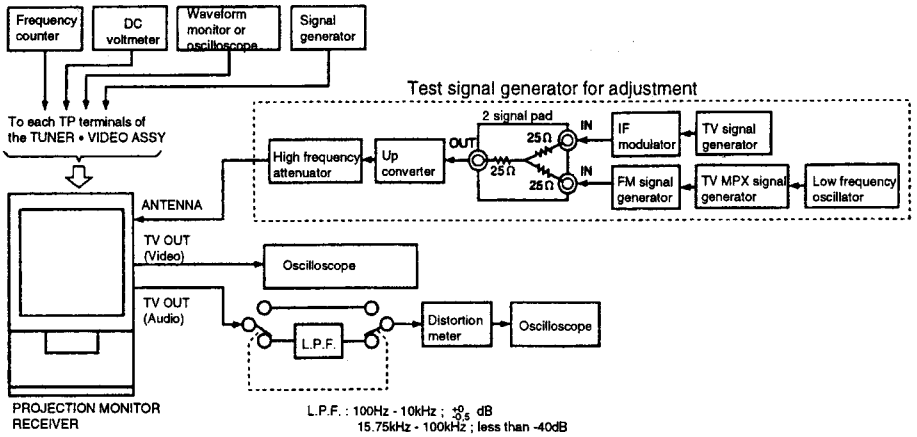
ANT A

Adjust the output of the TV OUT terminal on the rear panel to the minimum level.

Rch level - Lch input → minimum
Lch level - Rch input → minimum

RF signal
Video signal : fV = EIA color-bar, 60dBμV
Audio signal : fA = 300Hz, 100% MOD,L ch (or R ch) only, 54dBμV
9 ch (fp = 187.25MHz)

● Connection diagram for adjusting the tuner section:

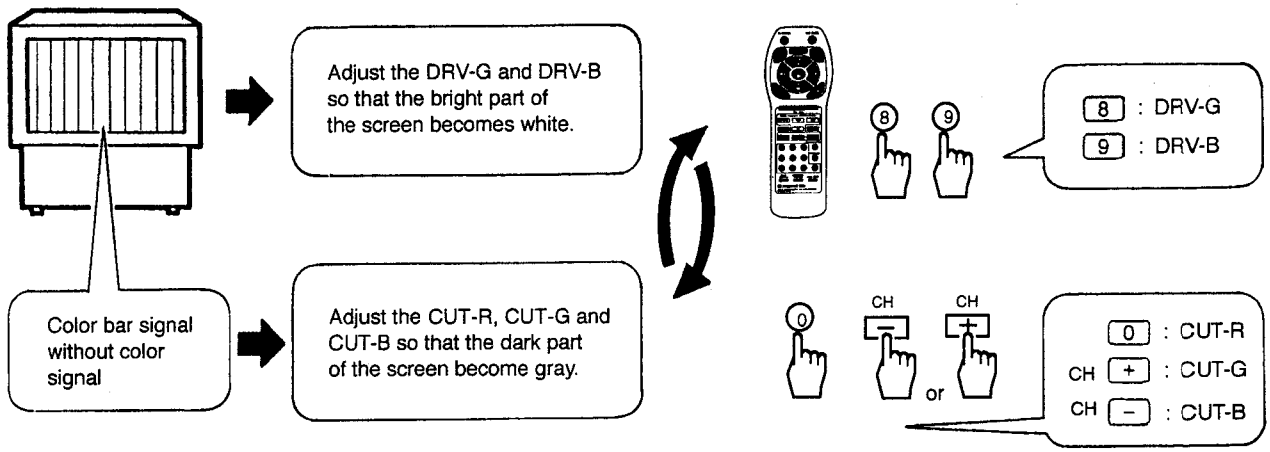


Note :

- Repeat step⑫-7 and ⑫-8 till the best separation.
- When performing the separation adjustment, be sure to perform WIDE BAND adjustment first.
- If performing the WIDE BAND adjustment, be sure to perform SPECTRAL adjustment.

13 White balance adjustment

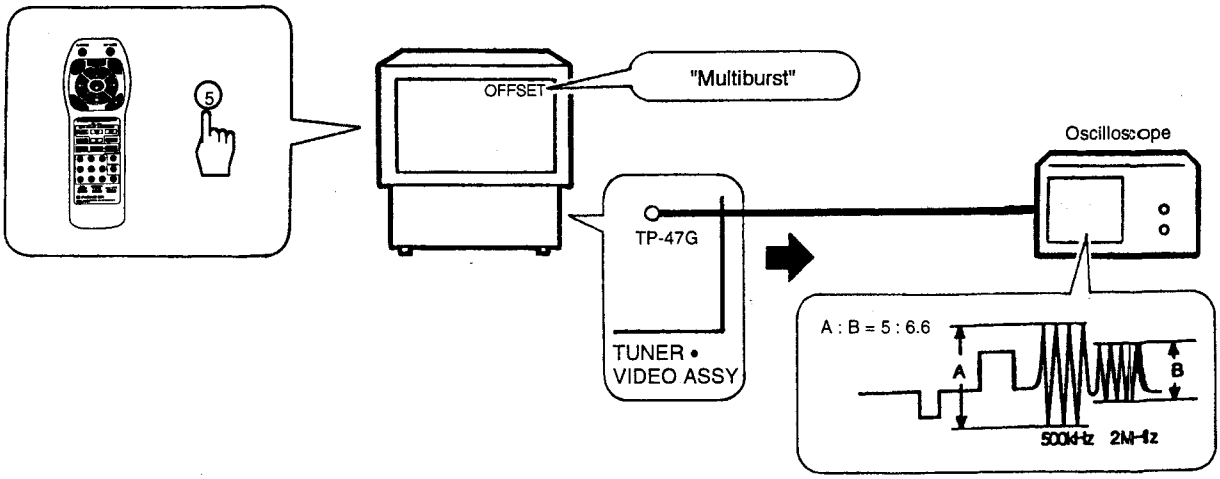
Start → 1st FAC



14 PIONEER's standard settings

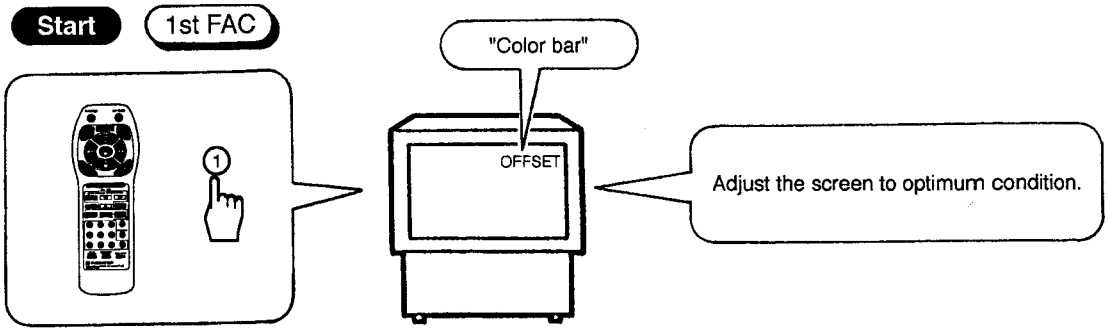
14-1 Sharpness adjustment

Start → 1st FAC ← Telop : Blue



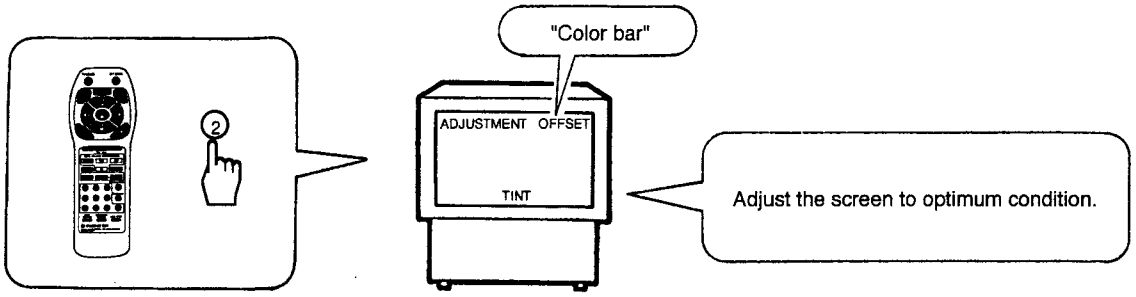
14-2 Color adjustment

Start → 1st FAC



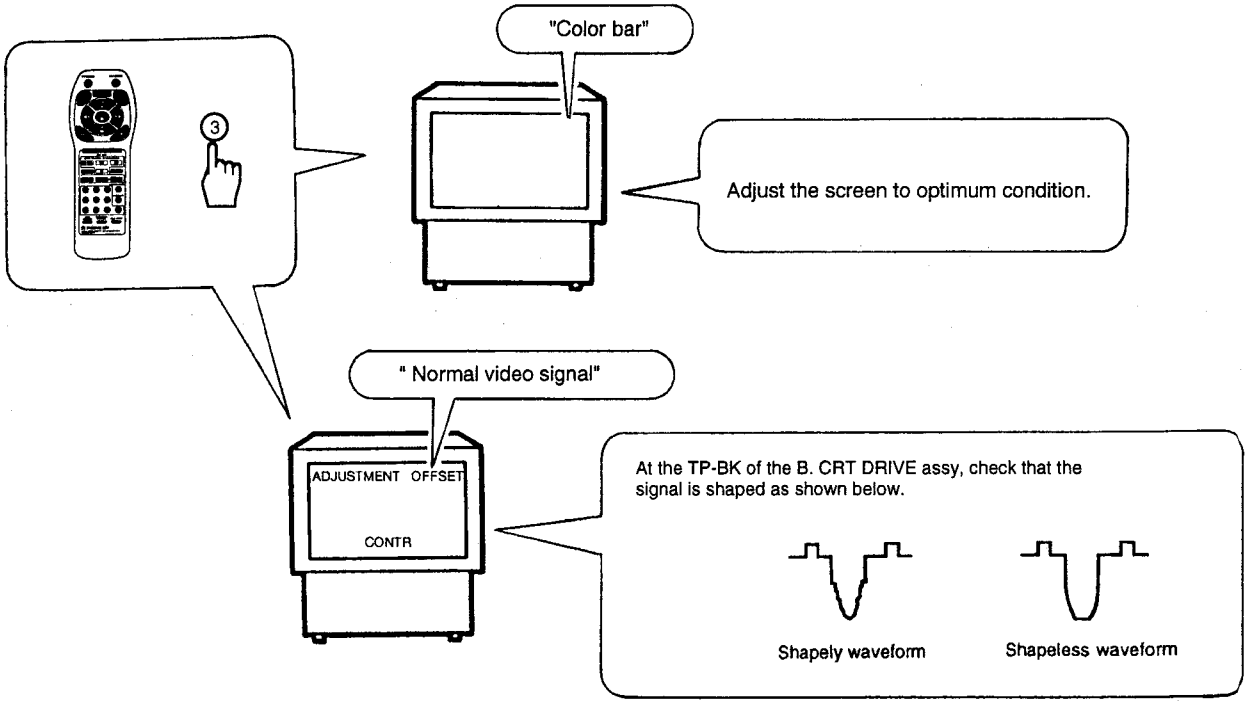
14-3 Tint adjustment

Start → 1st FAC

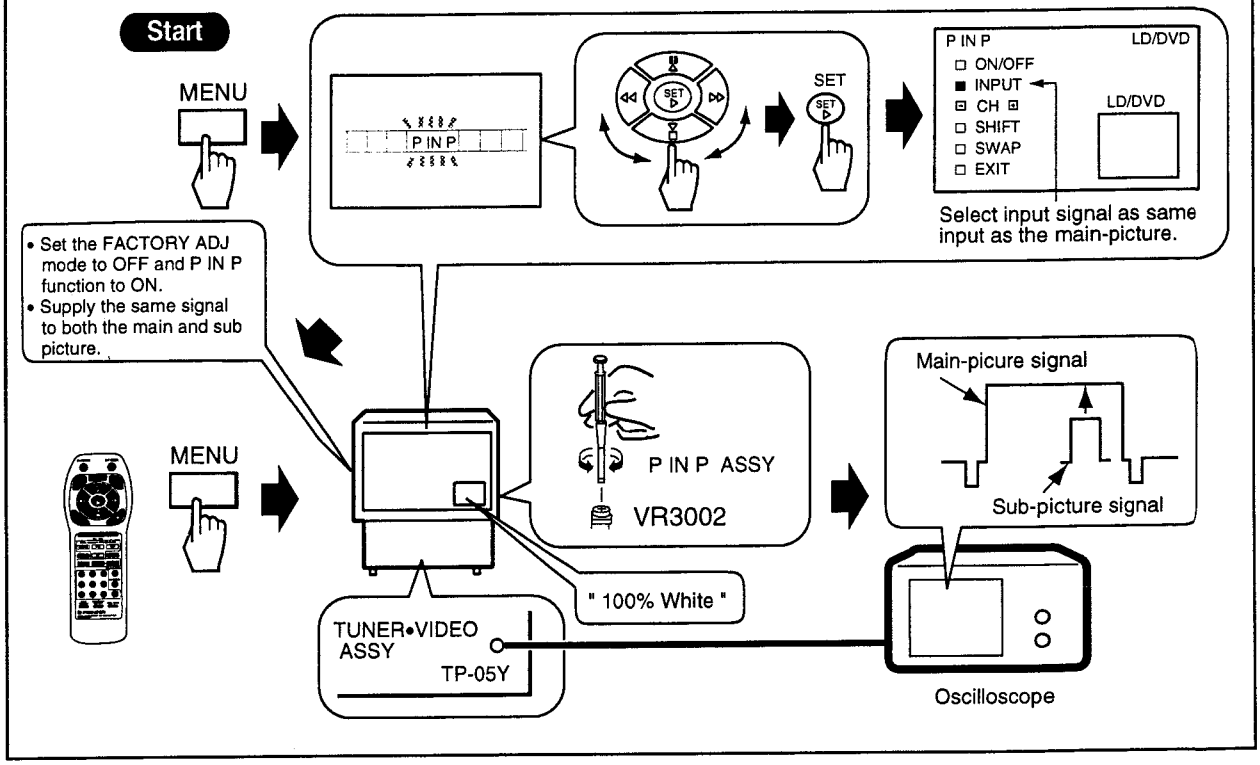


14-4 Contrast adjustment

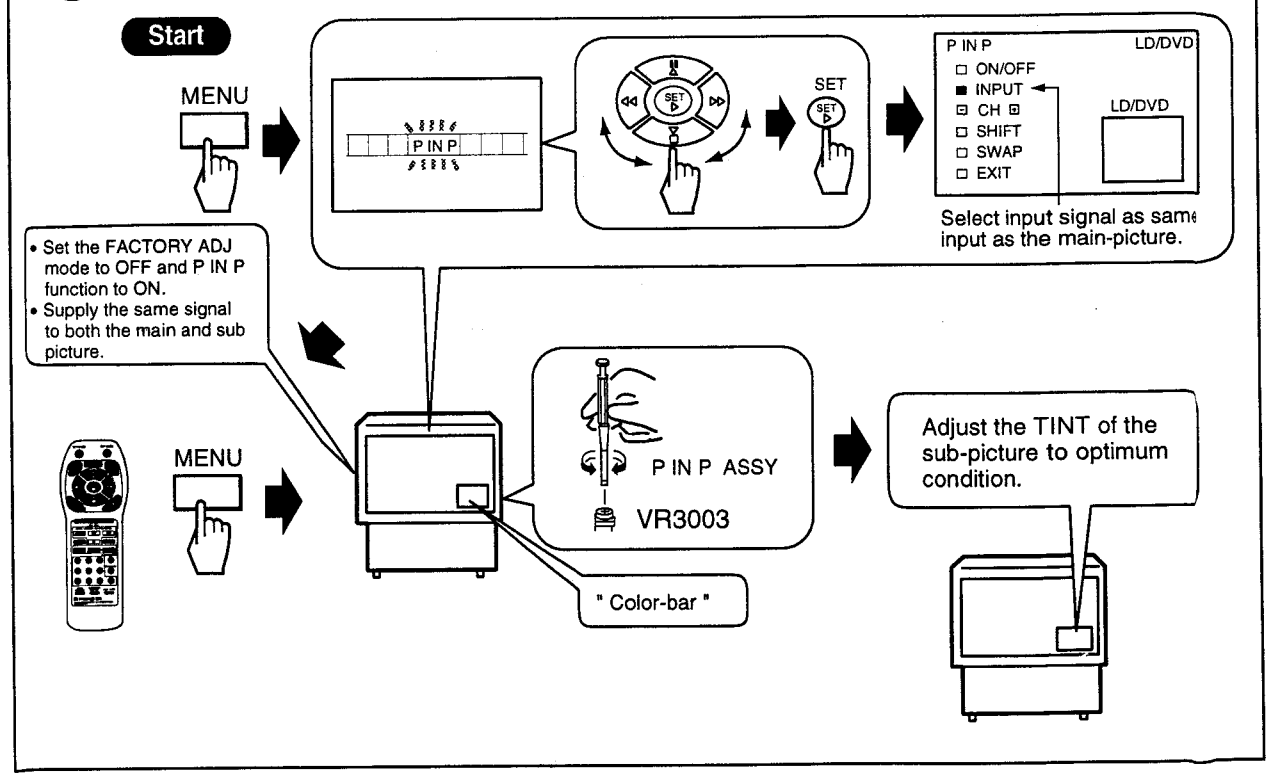
Start → 1st FAC



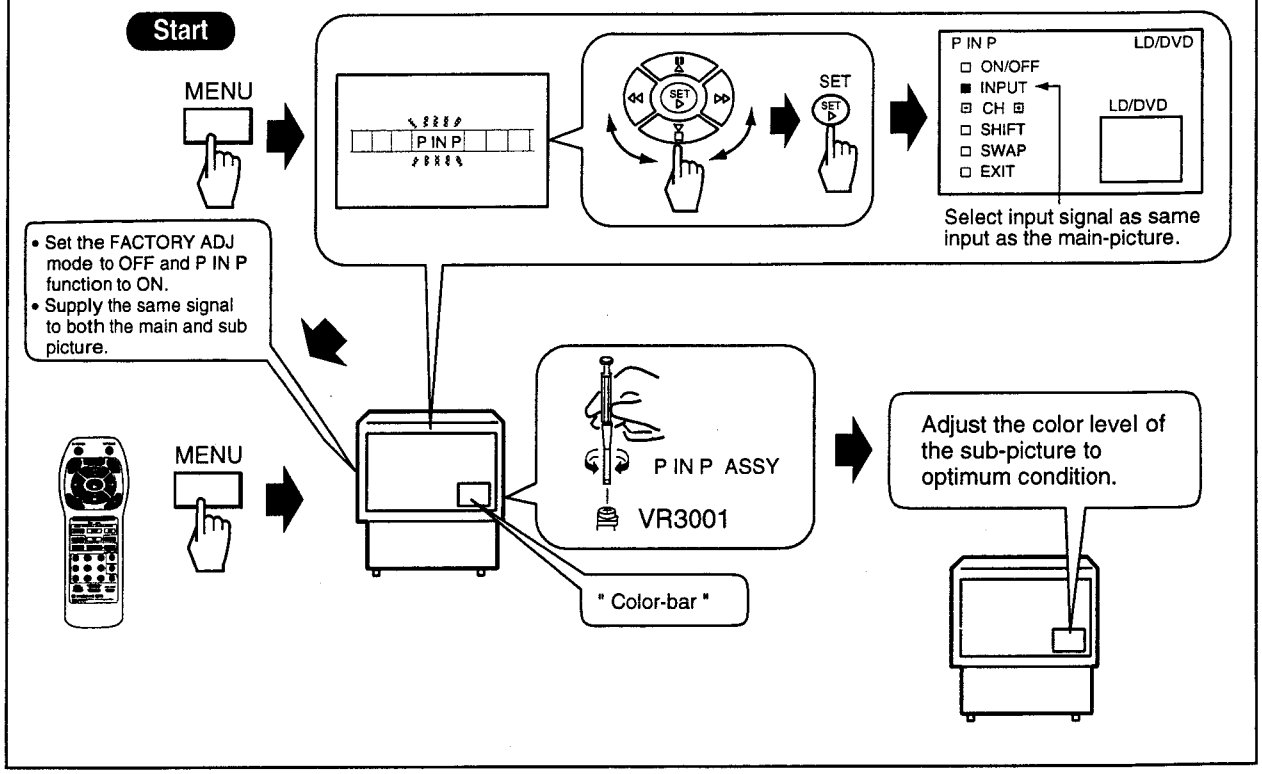
15 Y-signal level adjustment of sub-picture (adjustment for P IN P)



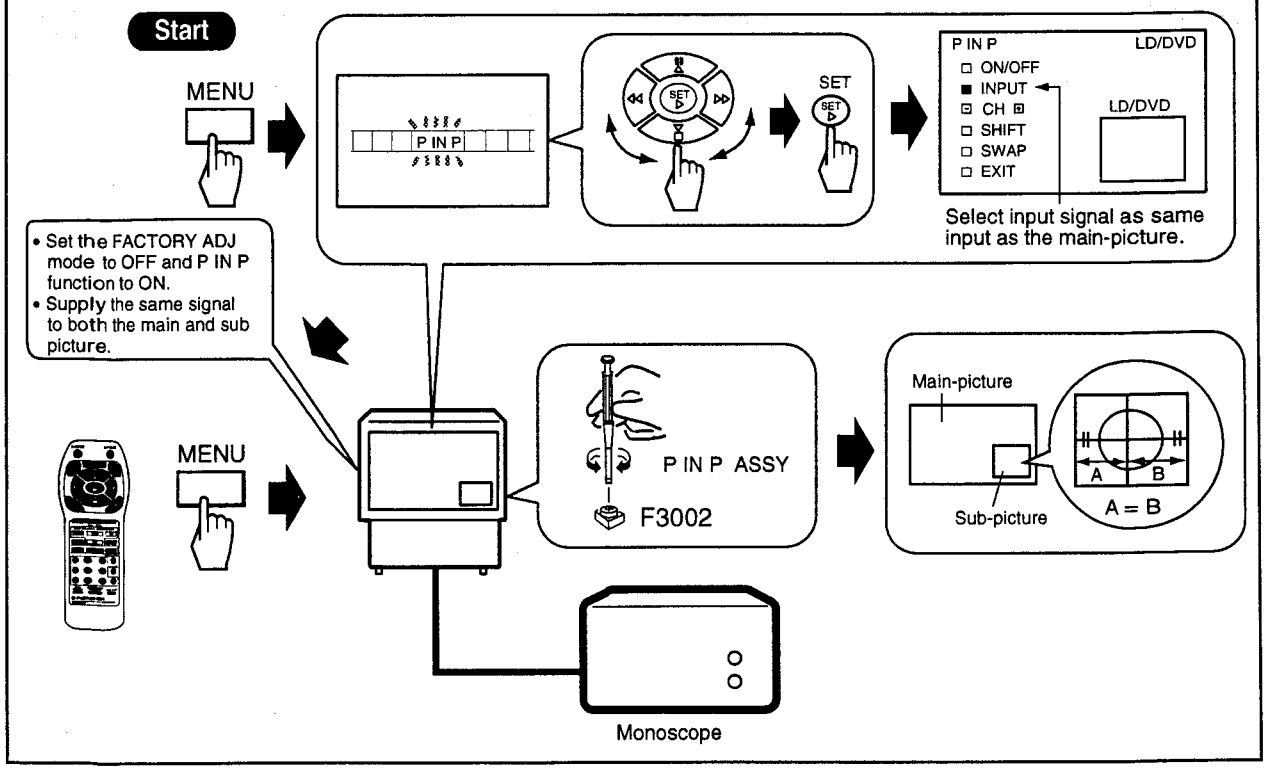
16 TINT adjustment of sub-picture (adjustment for P IN P)



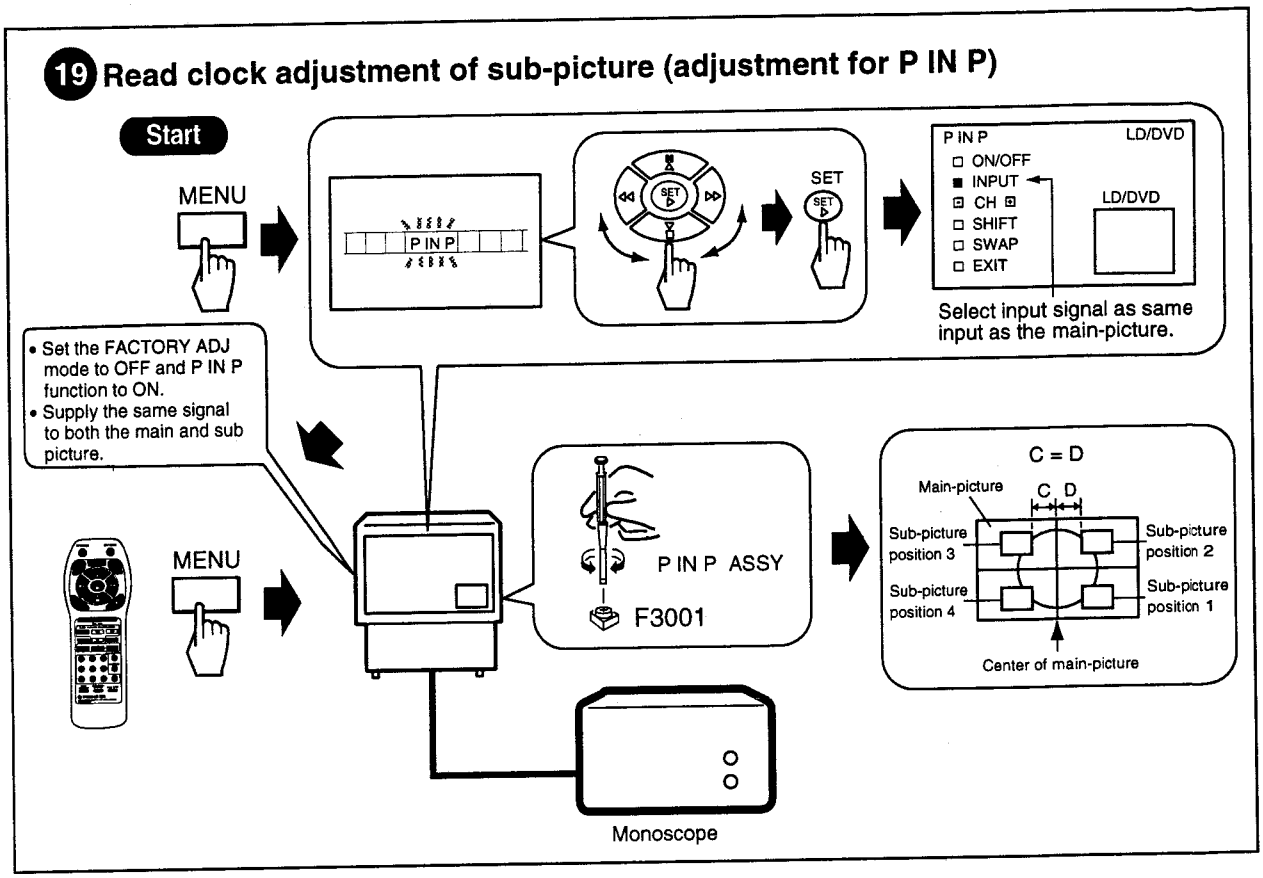
17 Color level adjustment of sub-picture (adjustment for P IN P)



18 Write clock adjustment of sub-picture (adjustment for P IN P)



19 Read clock adjustment of sub-picture (adjustment for P IN P)



7. GENERAL INFORMATION

7.1 REPLACING THE CRT ASSY

Serviceman Warning
When replacing the CRT assy, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

The anode cables of the CRT assy R, G, and B in PROJECTION MONITOR RECEIVER are connected in series as shown in Fig. 1.
When replacing the CRT assy, the anode cable have to be cut.

Note: Since the anode cables for the CRT assy to service supplies are only available in half lengths, either cut longer lengths, or join older lengths of cable to ensure that the original cable length is used.

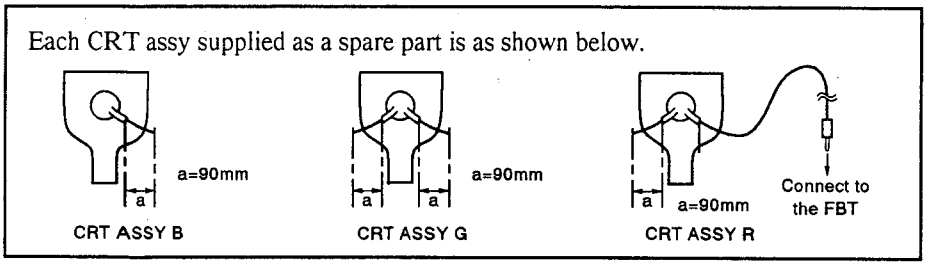
Table 1 Cable disconnecting methods

Cable	Replacement CRT assembly		
	When CRT assy B is replaced	When CRT assy G is replaced	When CRT assy R is replaced
Cable ⓐ	——	——	Disconnect the anode cable from the FBT. (Refer to page 132.)
Cable ⓑ	Leave it as is	Cut a place 20mm from the exact center towards the CRT assy G	Cut a place 20mm from the exact center towards the CRT assy R
Cable ⓒ	Cut a place 20mm from the exact center towards the CRT assy B	Cut a place 20mm from the exact center towards the CRT assy G	Leave it as is

Note : Do not cut other cables by mistake.

7.1.1 WHEN REPLACING THE CRT ASSY

Unplug the AC plug and let the unit discharge for more than 1 minute, then cut the anode cable according to table 1.



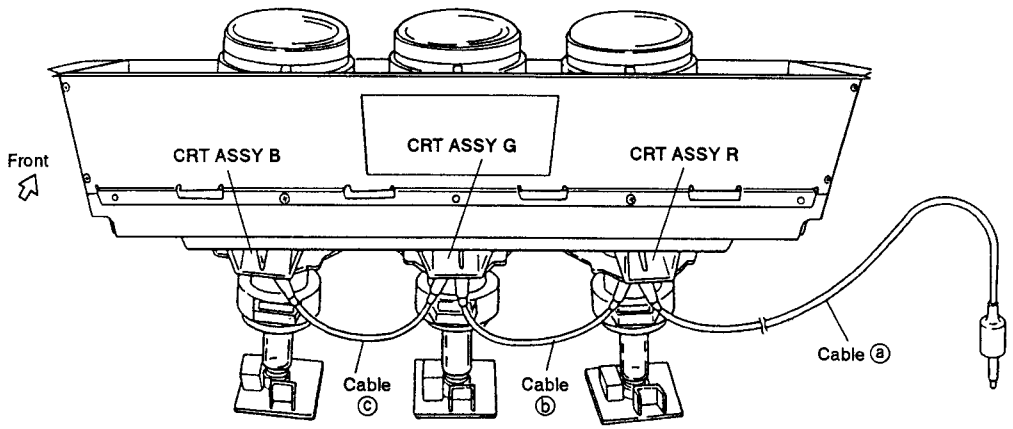
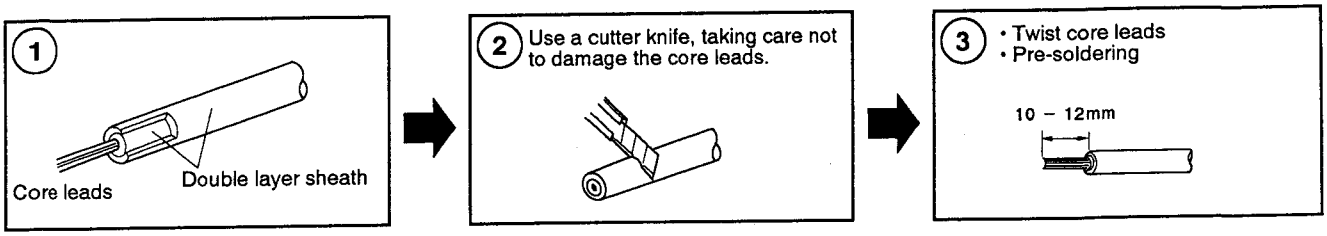


Fig. 1 Connection diagram of the each CRT assemblies

7.1.2 ANODE CABLE STRUCTURE AND SHEATH PEELING

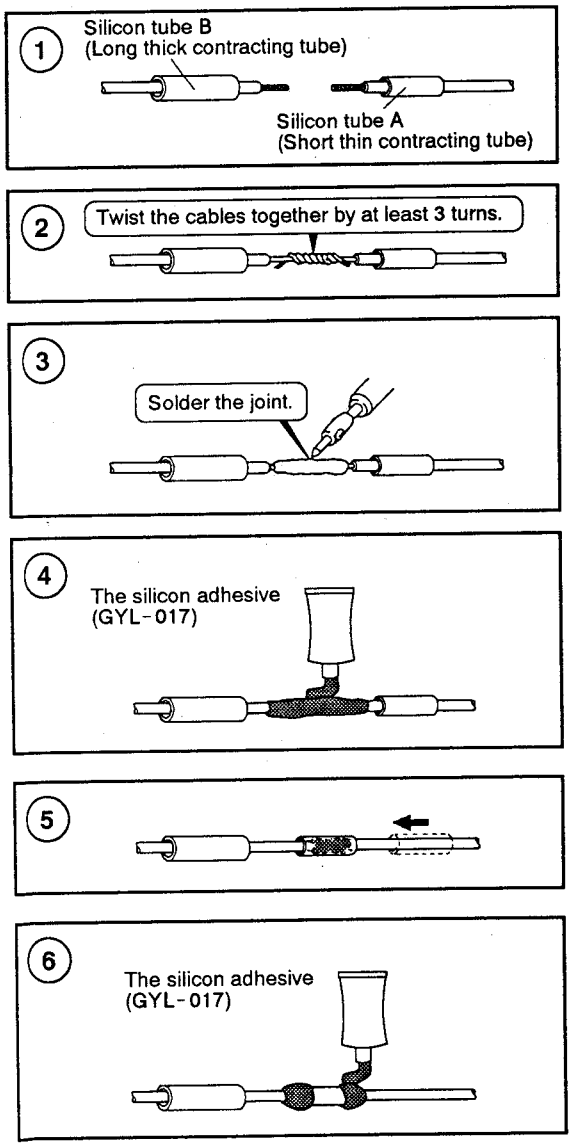


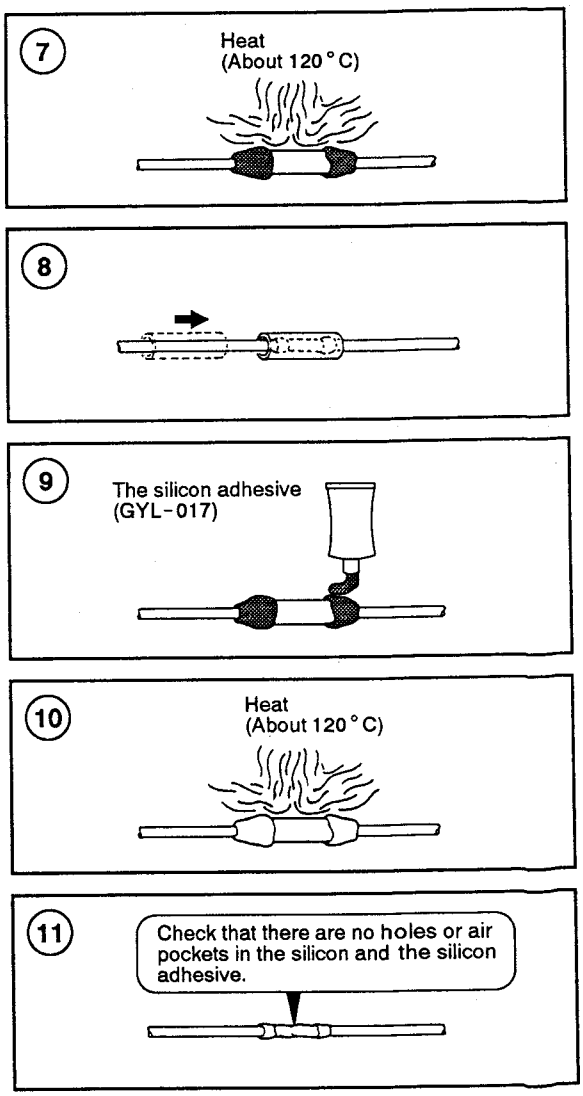
7.1.3 ANODE CABLE JOINING PROCEDURE

The silicon tube is packed with CRT ASSY. For the silicon adhesive, be sure to use silicon adhesive part number GYL-017.

● **CAUTION** When connecting the anode cable, pay attention to the following.

- Take care not damage the anode cable sheath.
- Insulate the cable leads from other parts using the silicon adhesive and the silicon tube.
- Apply the silicon adhesive so that those are not air gaps.





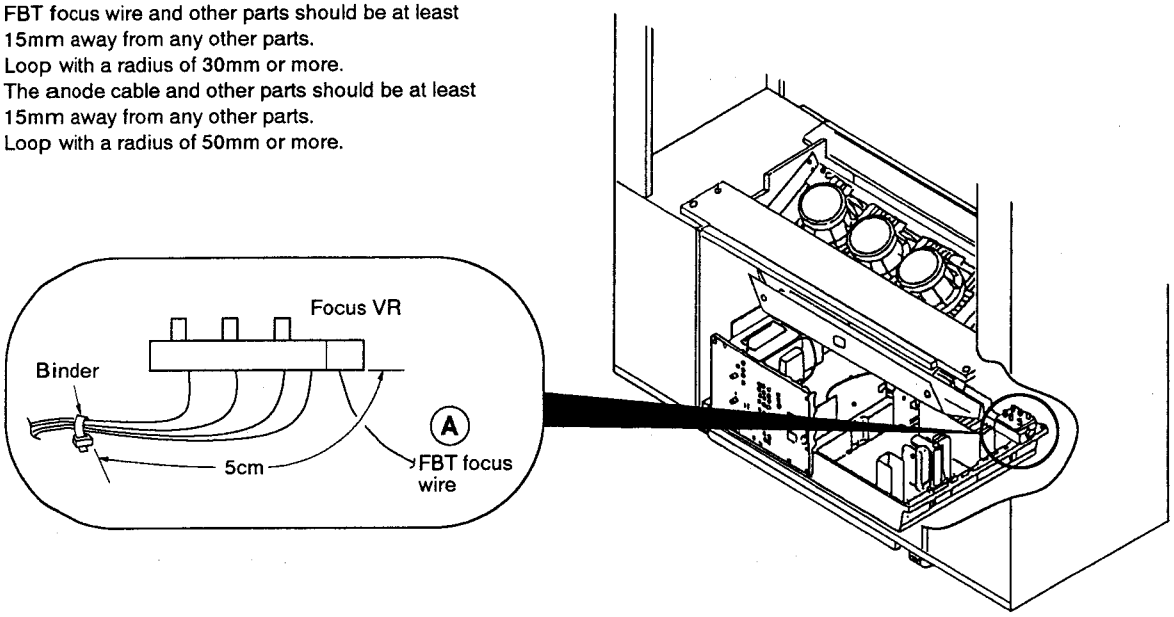
7.2 WIRING DIAGRAM

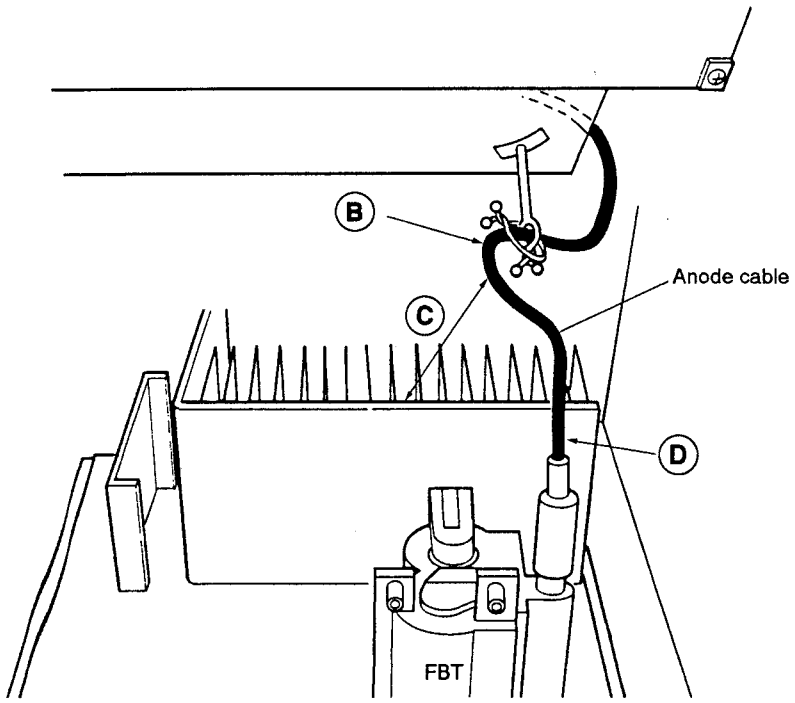
Reconnect any disconnected lead wires of the Projection monitor receiver.

The important points for connection of the lead wires are as shown below.

You may find that they were connected differently. Be sure reconnect the lead wires as they were.

Note :
Ⓐ: FBT focus wire and other parts should be at least 15mm away from any other parts.
Ⓑ: Loop with a radius of 30mm or more.
Ⓒ: The anode cable and other parts should be at least 15mm away from any other parts.
Ⓓ: Loop with a radius of 50mm or more.





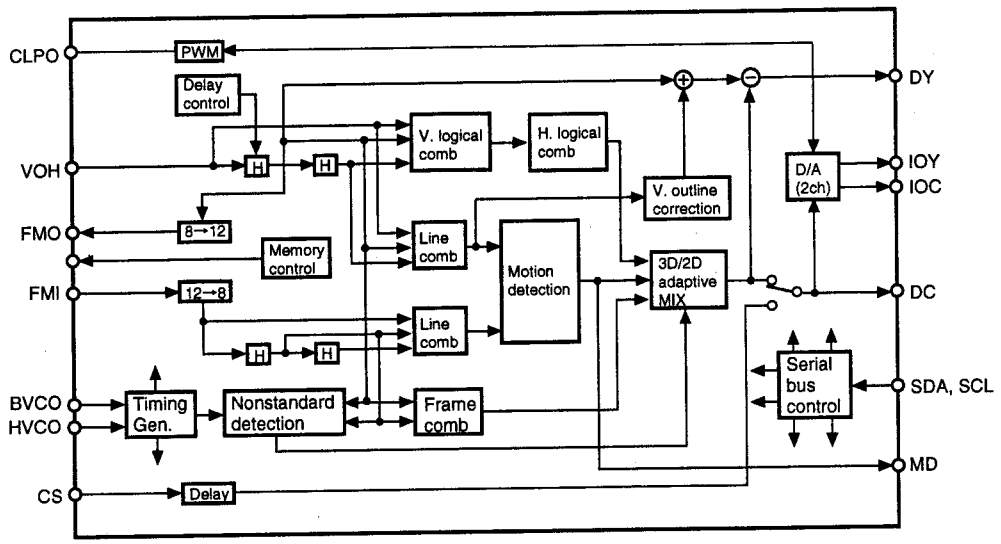
7.3 IC INFORMATION

• The information in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ UPD6487GF3BA (3D Y/C ASSY : IC3505)

• 3D Y/C SEPARATION LSI

● Block Diagram



● Pin Function

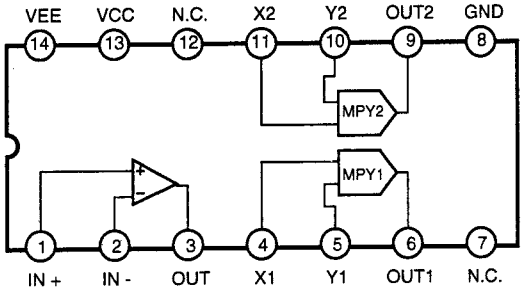
No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	DGND	—	Ground for digital section	20	FMO11	O	Frame delayed output (12 bit) for external field memory
2	CS7	I	Input chroma signal at separate input mode. Connect to GND at not used.	21	FMO10		
3	CS6			22	FMO9		
4	CS5			23	FMO8		
5	CS4			24	FMO7		
6	CS3			25	FMO6		
7	CS2			26	FMO5		
8	CS1			27	FMO4		
9	CS0			28	FMI11	I	Frame delayed input (12 bit) for external field memory
10	ADCK	O	Clock output for A/D converter	29	FMI10		
11	CLPO	O	Clamp D/A output for A/D converter PWM output for the differential of clamp level (64) and video pedestal level. Pulse width is charged between 1/16 and 15/16.	30	DGND	—	Ground for digital section
12	VOH7	I	Input composite video signal which was A/D converted by 8 bit. In the separate input mode, input luminance signal.	31	DVDD	—	Power supply for digital section
13	VOH6			32	FMI9	I	Frame delayed input (12 bit) for external field memory
14	VOH5			33	FMI8		
15	VOH4			34	FMI7		
16	VOH3			35	FMI6		
17	VOH2			36	FMI5		
18	VOH1			37	FMI4		
19	VOH0			38	MRSB	O	Reset pulse output for extenal field memory with active low. Connect the write/read reset pin of UPD22280V-30.

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
39	MRS	O	Reset pulse output for external field memory with active high	70	DY1	O	Separated luminance signal output with 9 bit digital straight binary
40	MWCK	O	Memory write clock output	71	DY2		
41	MRCK	O	Use for writing clock of memory which is connected to external.	72	DY3		
42	FMO3	O	Frame delayed output (12 bit) for external field memory	73	DY4		
43	FMO2			74	DY5		
44	FMO1			75	DY6		
45	FMO0			76	DY7		
46	FNI3	I	Frame delayed input (12 bit) for external field memory	77	DY8		
47	FMI2			78	VTR	O	Non standard detection monitor output (Standard : L, Non standard : H)
48	FMI1			79	CTL	I	Control input. Select the pin function by CTLS (SA14:D7) of serial bus. Becomes luminance NR mode by CTLS=0 : CTL pin = H. Becomes forced 2D Y/C separation by CTLS:1 : CTL pin = H.
49	FMI0			80	DGND	—	Ground for digital section
50	DVDD	—	Power supply for digital section	81	HVCO	I	Input 910fH line lock clock When using the system for Y/C seoaration mode fixed (YCMD=1), connect the GND.
51	DGND	—	Ground for digital section	82	DVDD	—	Power supply for digital section
52	MD0	O	4 bit motion detection signal output with delayed by 1H + 21 clocks	83	HPD	O	Output the phase difference as compared HSS pin input with HREF output
53	MD1			84	DGND	—	Ground for digital section
54	MD2			85	HREF	O	Output the reference signal for line lock clock generating PLL
55	MD3			86	HSS	I	H. sync. signal input
56	SCL	—	I^2C bus serial clock input	87	AGND	—	Ground for analog (D/A) section
57	SDA	I	I^2C bus serial data input	88	IOC	O	Chroma signal analog output
58	TES1	I	I^2C bus interface initialize input When set to High level, initialize the I^2C bus interface and open the SDA line. During Hi-level period, bus is not accept the signal.	89	AVDD	—	Power supply for analog (D/A) section
59	TES2	I	Normally, connect to GND	90	IREF	O	Output the reference current of D/A
60	DC0	O	Separated chroma signal output with 9 bit digital straight binary	91	VREF	V	Input the reference voltage of D/A
61	DC1			92	COMP	O	Connect a capacitor for D/A phase compensation
62	DC2			93	AVDD	—	Power supply for analog (D/A) section
63	DC3			94	IOY	O	Luminance signal analog output
64	DC4			95	AGND	—	Ground for analog (D/A) section
65	DC5			96	VDI	I	V. sync. pulse which is sync. seoarated input with active low
66	DC6			97	CLPI	I	Clamp pulse input with active high
67	DC7			98	KIL	I	Killer input with active high
68	DC8			99	DVDD	—	Power supply for digital section
69	DY0	O	Separated luminance signal output with 9 bit digital straight binary	100	BVCO	I	4 fsc input of burst lock clock

■ CA0007AM (FULL CINEMA CONVER ASSY : IC6801) (CONVERGENCE ASSY : IC2323)

• DUAL ANALOG MULTIPLIER

● Block Diagram



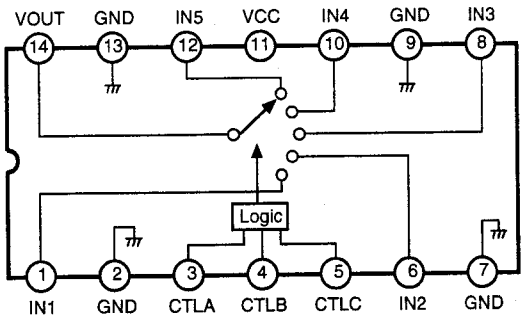
● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	IN +	I	OP amp. non-inverting input	8	GND	—	Ground
2	IN -	I	OP amp. inverting input	9	OUT2	O	MPY2 output
3	OUT	O	OP amp. output	10	Y2	I	Y input of MPY2
4	X1	I	X input of MPY1	11	X2	I	X input of MPY2
5	Y1	I	Y input of MPY1	12	N.C.	—	Non connection
6	OUT 1	O	MPY1 output	13	VCC	—	Power supply pin
7	N.C.	—	Non connection	14	VEE	—	Power supply pin

■ BA7649A (AV I/O ASSY : IC1503)

• VIDEO SIGNAL SWITCH

● Block Diagram

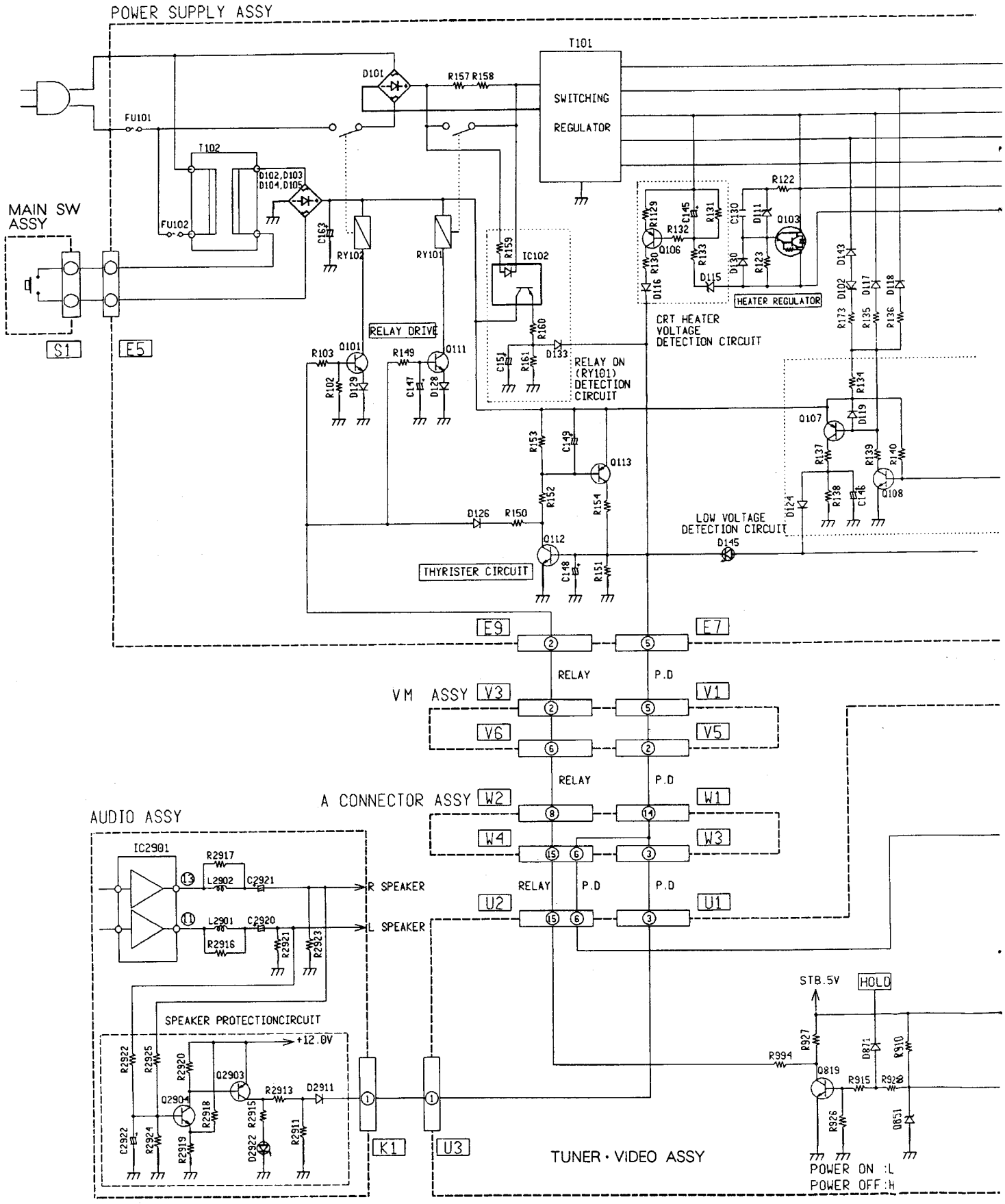


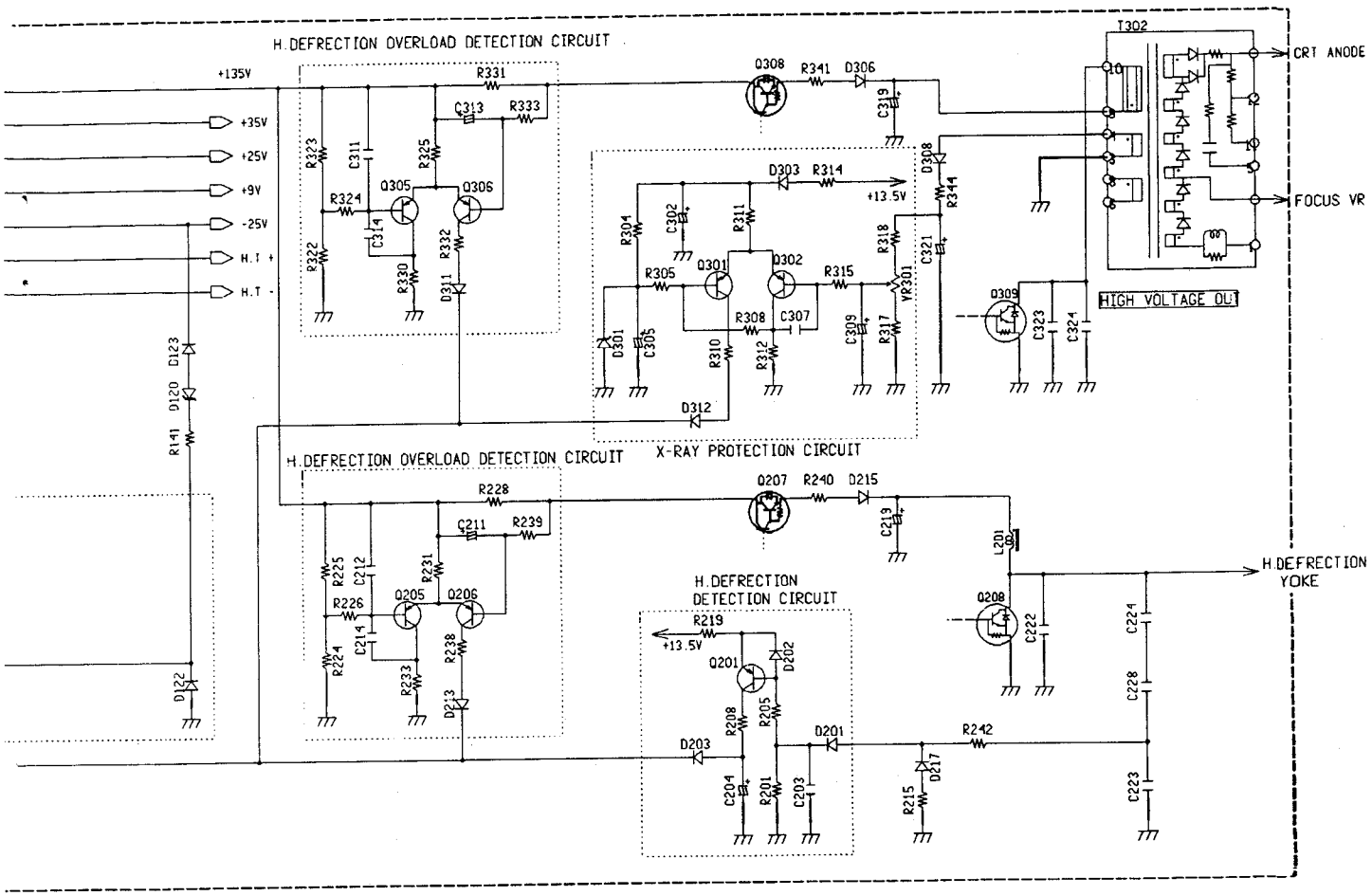
● Truth Table

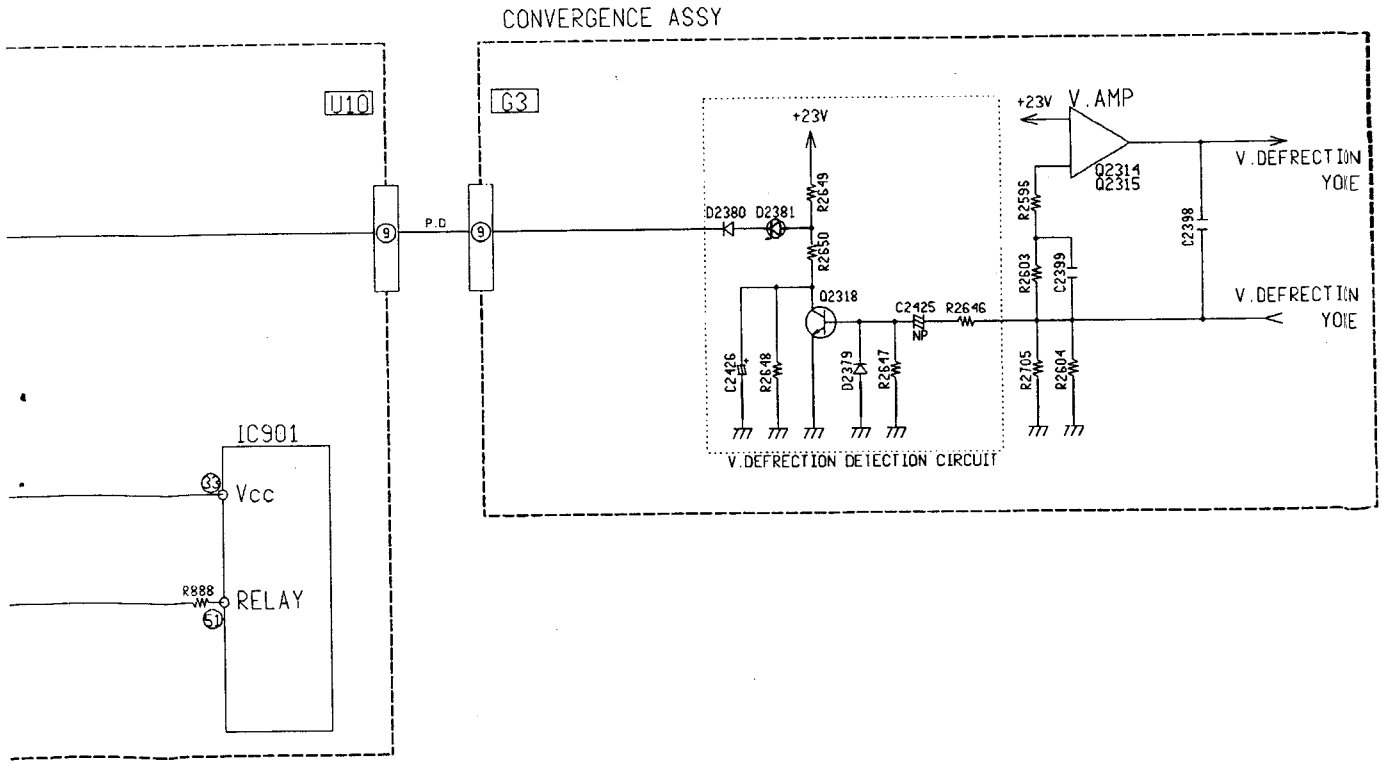
CTL- A	CTL- B	CTL- C	OUT
L (OPEN)	L (OPEN)	L (OPEN)	IN1
L (OPEN)	H	L (OPEN)	IN2
H	L (OPEN)	L (OPEN)	IN3
H	H	L (OPEN)	IN4
*	*	H	MUTE(IN5)

7.4 BLOCK DIAGRAMS

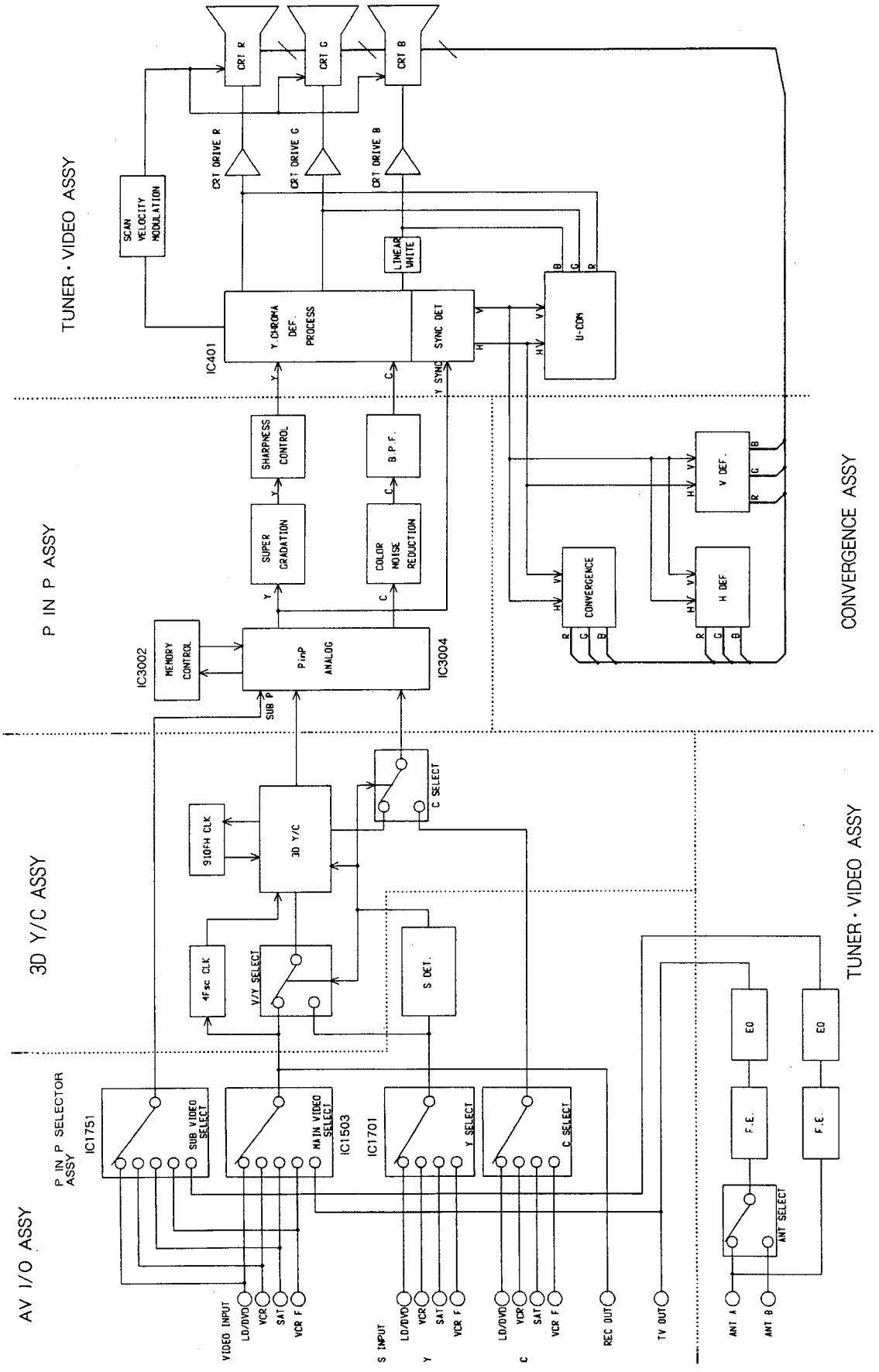
7.4.1 Protection Block



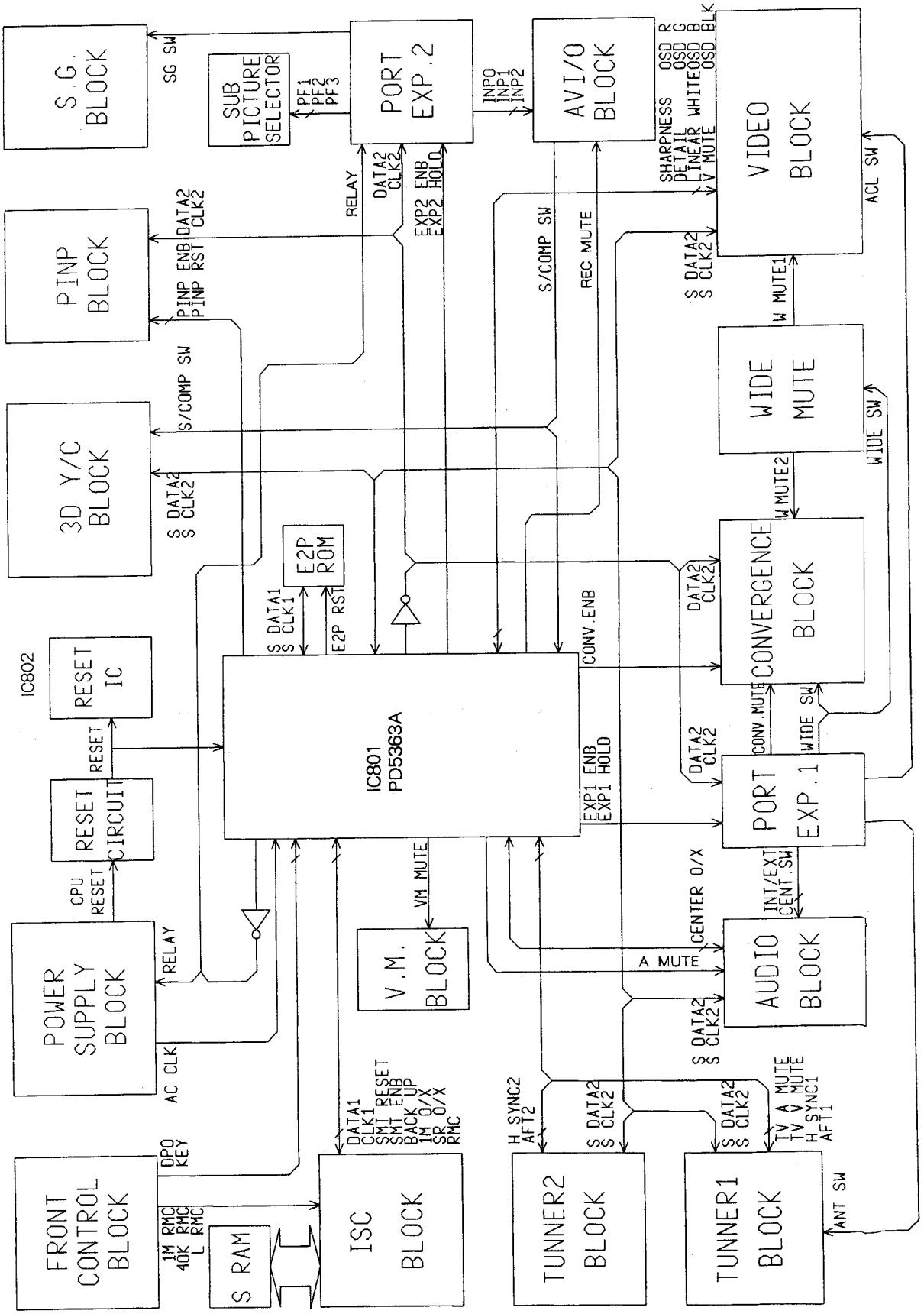

H.DEFRECTION OVERLOAD DETECTION CIRCUIT
+135V
+35V
+25V
+9V
-25V
H.T +
H.T -
T302
CRT ANODE
FOCUS VR
HIGH VOLTAGE OUT
X-RAY PROTECTION CIRCUIT
H.DEFRECTION OVERLOAD DETECTION CIRCUIT
H.DEFRECTION DETECTION CIRCUIT
H.DEFRECTION YOKE


CONVERGENCE ASSY
U10
G3
P.D
+23V
V.AMP
V.DEFRECTION YOKE
V.DEFRECTION YOKE
V.DEFRECTION DETECTION CIRCUIT
IC901
Vcc
RELAY

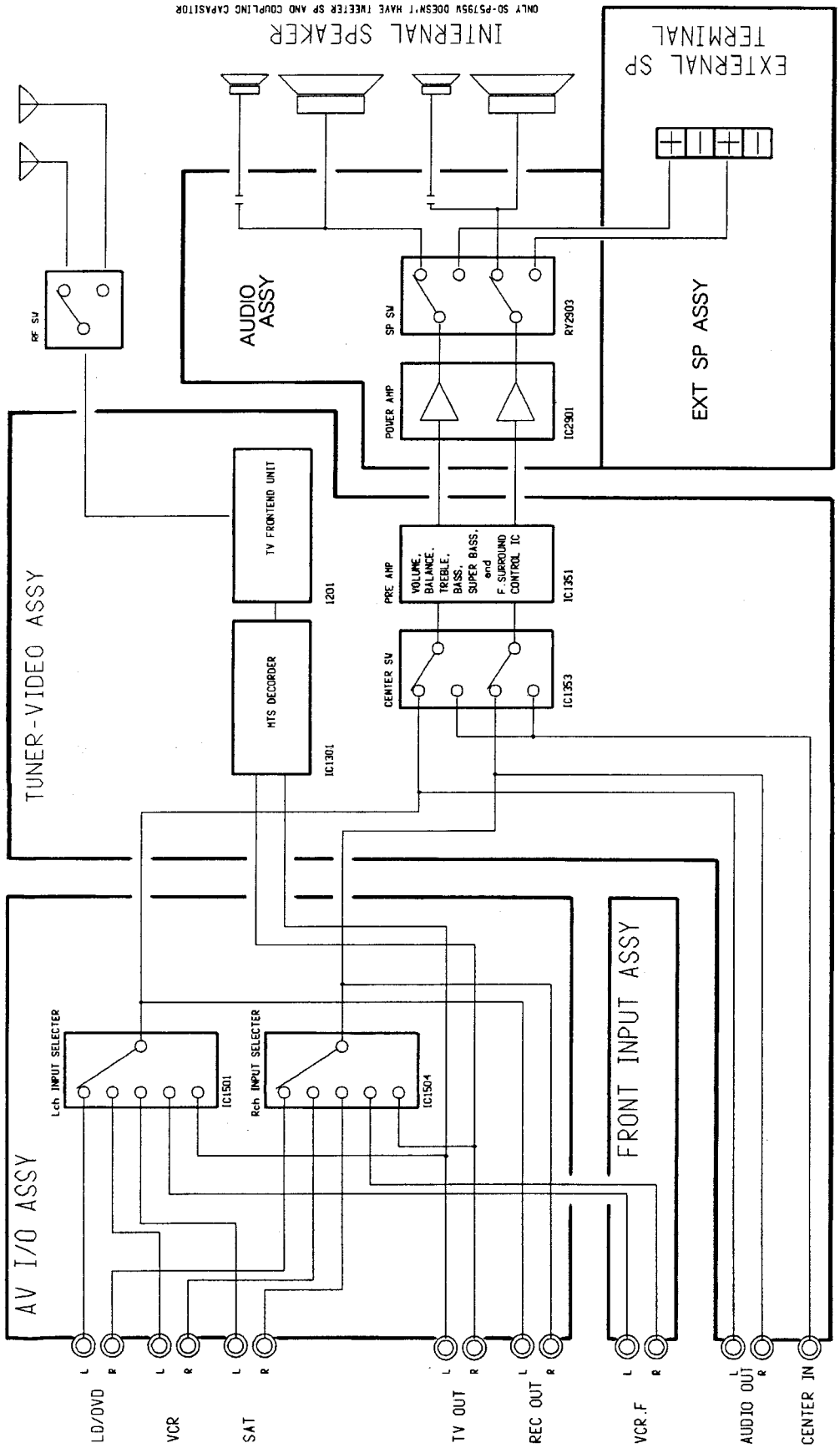
7.4 2 Video Block



7.4.3 UCOM Block



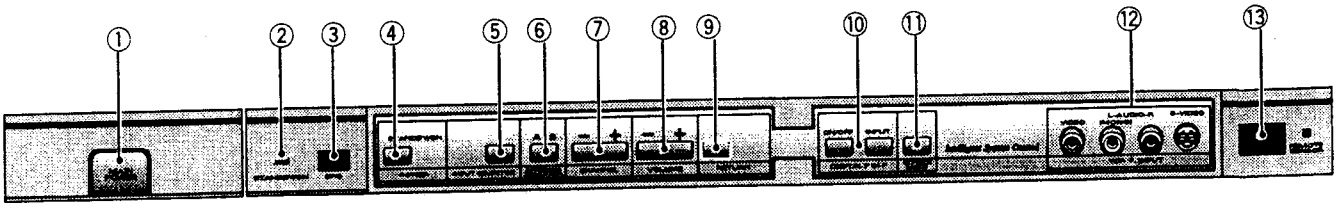
7.4.4 Audio Block



8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

- **FRONT PANEL**



① MAIN POWER switch : Turns ON/OFF the TV power.

② STANDBY ON indicator : Displays the power state. (Red:STANDBY, Green:ON)

③ DPO sensor : Sensor to detect the room brightness.

④ POWER STANDBY/ON switch : Turns the TV power to ON or STANDBY state.

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

⑤ INPUT SELECTOR button : Input is switched each time this button is pressed.

TV → LD/DVD → VCR → SAT → VCR F. (Front)

⑥ ANTENNA SELECTOR button : Switches between ANTENNA-A and ANTENNA-B.

⑦ CHANNEL buttons : Switches channels.

⑧ VOLUME buttons : Adjusts the volume.

⑨ RETURN button : Returns to the initial setting condition.
Press when picture or sound disappears while adjusting picture quality or sound quality.
When the RETURN button is pressed, all settings will be cleared. Set from the beginning again.

⑩ DIGITAL P IN P buttons

ON/OFF : Turns the P IN P function ON/OFF.

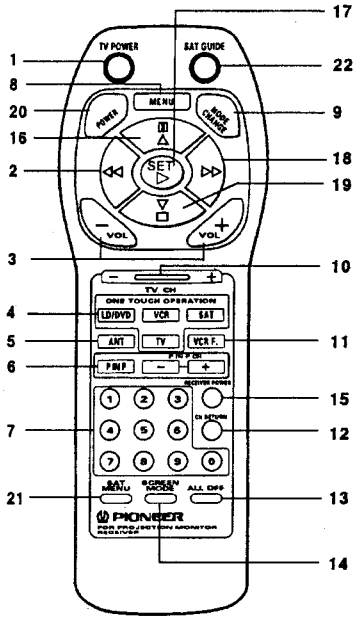
INPUT : Switches the input source of the slave screen.

⑪ SCREEN MODE button : Switches screen modes. (NORMAL CINEMA ⟷ FULL CINEMA)

⑫ VCR F. (front) input terminal : Connects to the video camera, etc.

⑬ REMOTE SENSOR : Receives the remote control signal.

• REMOTE CONTROL UNIT



TV CONTROL BUTTONS

1 **TV POWER button**
2 **Select / Adjust / Set buttons**
3 **VOLUME button**
4 **ONE TOUCH OPERATION buttons (LD/DVD, VCR, SAT, TV)**
When one of these buttons is pressed, the button will light up in red for several seconds, the input will be switched, enabling ONE TOUCH OPERATION to be performed.
5 **ANT (antenna) selector button**
6 **P IN P operation buttons**
7 **Number buttons**
8 **MENU button**
9 **MODE CHANGE button**
Switches the operation mode (LD/DVD, VCR, SAT, TV) of the remote control unit.
(The ONE TOUCH OPERATION button lights up.)
10 **TV CH (channel) button**
11 **VCR F. (front) button**
Press to watch the source connected to the VCR F. INPUT terminal on the front panel.
12 **CH RETURN button**
13 **ALL OFF button**
Turns OFF the powers of the TV and selected input source together.
14 **SCREEN MODE button**

RECEIVER CONTROL BUTTONS

3 **VOLUME button**
Adjusts the volume of the receiver.
This button can be used only when AUDIO TV/SYS is switched to "SYS".
15 **RECEIVER POWER button**
Turns the power of the receiver on and off.

NOTE:
Preset the RECEIVER remote control signal according to REMOTE CODE SET UP.

LD/DVD CONTROL BUTTONS

Press the MODE CHANGE button or ONE TOUCH OPERATION LD/DVD button and switch the remote control unit operation mode to LD/DVD.

1 **POWER button**
Turns the power of the LD/DVD player on and off.
2 **⏮◀◀ (chapter search)/◀◀ (scan) button**
Pressing quickly once takes you to the start of the chapter currently playing. Each time you press it, you move back to the start of the previous chapter. Continue pressing to scan.
16 **II (pause/still) button**
Set pauses and still pictures.
17 **▶ (play) button**
Selects playback.
18 **▶▶⏭ (chapter search)/▶▶ (scan) button**
Pressing quickly once takes you to the start of the next chapter. Each time you press it, you move ahead to the start of the next chapter. Continue pressing to scan.
19 **■ (stop) button**
Playback is stopped when pressed once.

NOTE:
Preset the LD/DVD remote control signal according to REMOTE CODE SET UP.

VCR CONTROL BUTTONS

Press the MODE CHANGE button or ONE TOUCH OPERATION VCR button and switch the remote control unit operation mode to VCR.

1 **POWER button**
Turns the power of the VCR on and off.
2 **◀◀ (rewind) button**
Rewinds the tape and arrows picture search.
16 **II (pause/still) button**
Set pauses and still pictures.
17 **▶ (play) button**
Selects playback.
18 **▶▶ (fast forward) button**
Rapidly advances the tape and arrows picture search.
19 **■ (stop) button**
Stops the tape transport.

NOTE:
Preset the VCR remote control signal according to REMOTE CODE SET UP.

SAT CONTROL BUTTONS

Press the MODE CHANGE button or ONE TOUCH OPERATION SAT button and switch the remote control unit operation mode to SAT.

20 **POWER button**
Turns the power of the satellite broadcasting tuner on and off.
7 **Number button***
Selects the channel.
21 **SAT MENU button**
Turns ON/OFF satellite broadcasting menu.
22 **SAT GUIDE button**
Turns ON/OFF satellite broadcasting information.
2,16, 18,19 **◀ ▶ ▲ ▼ button**
Press to select items on the menu screen.
17 **SET button**
Use to execute menu items.
12 **CH RETURN button***
Use to alternately switch the current channel and previous channel.

NOTE:
Preset the SAT remote control signal according to REMOTE CODE SET UP.

** NOTE:*
The 2 and 7 buttons function when the TV input is SAT and SAT CONTROL has been switched to ON.

CABLE BOX CONTROL BUTTONS

Switch the CABLE TV/SYS setting to "SYS", and press the MODE CHANGE button or ONE TOUCH OPERATION TV button and switch the remote control unit operation mode to TV.

20 **POWER button**
Turns the power of the CABLE BOX on and off.
7 **Number button**
Selects the channel.
10 **CH (channel) button**
Selects the channel.
12 **CH RETURN button**
Use to alternately switch the current channel and previous channel.

NOTE:
Preset the CABLE BOX remote control signal according to REMOTE CODE SET UP.

8.2 SPECIFICATIONS

Display section

Reception system American TV standard NTSC system
Screen size ..... 60" (PRO-119)
51" (PRO-99)
CRT ..... 7" High focus CRT × 3
Brightness (White peak) ..... 400 Foot-Lambert (PRO-119)
550 Foot-Lambert (PRO-99)
[100 % Window signal input contrast, bright Max.]
Horizontal resolution ..... 1000 lines
[Input digital test pattern (1000 lines resolution)]
Input terminals ..... 4 video input systems,
4 S-VIDEO input jacks (Y/C separate INPUT)
4 audio input systems
Output terminals ..... REC OUTPUT (To VIDEO)
Video output, audio output (For recording) × 1
Input signal Video signal: 1.0 Vp-p ±0.2 V (75 Ω load)
Audio signal: 500 mV rms
Input impedance ..... Video input: 75 Ω ±10 %
Audio input: 22 kΩ or more
Input signal polarity ..... Synchronized negative
Output terminal signal ratings:
Output terminals
(VIDEO) ..... Video signal: 1 Vp-p (75 Ω load)
Audio signal: 500 mV rms (100 % modulation)
Output impedance ..... Video output: 75 Ω ±10 %
Audio output: Less than 1 kΩ

Tuner section

Circuit type ..... Video signal detection:
PLL full synchronous detection
PLL digital synthesizer system
Audio multiplex: BTSC system
Reception channels VHF; CH2 to CH13, UHF; CH14 to CH69
CATV (STANDARD, AIR, IRC or HRC)
CATV 1 to 125 CH
Antenna terminals
..... Antenna terminal, 75 ohms UNBAL,
F-type connector (VHF, UHF MIXED)

Amplifier section

Effective output
Front both channels driven ..... 10 W + 10 W
Built-in speaker system ..... 16 cm (6-1/2 in) × 2
6 cm (2-3/8 in) × 2

Electrical section, miscellaneous

Power requirements ..... 120 V AC, 60 Hz
Power consumption ..... 280 W, 480 VA (CSA)
External dimensions
PRO-119 ..... 1361 (W) × 655 (D) × 1429 (H) mm
53-9/16 (W) × 25-3/4 (D) × 56-1/4 (H) in
PRO-99 ..... 1170 (W) × 600 (D) × 1302 (H) mm
46-1/16 (W) × 23-5/8 (D) × 51-1/4 (H) in
Weight of main unit
PRO-119 ..... 121 kg (266 lb 13 oz)
PRO-99 ..... 104 kg (229 lb 5 oz)

Wireless remote control unit

Operation system ..... Infrared remote control system
Power source
Two DURACELL® "AA" MN1500 1.5 V
alkaline dry cell batteries
Dimensions ..... 60 (W) × 43.8 (H) × 183 (D) mm
2-3/8 (W) × 1-23/32 (H) × 7-7/32 (D) in
Weight ..... 129 g (5 oz) (without batteries)

Accessories

Operating instructions 1
Warranty card 1
Remote control unit 1
DURACELL® "AA" MN1500 1.5 V alkaline dry cell batteries 2
Protective screen 1
Frame cover V 2
Frame cover H 2
Frame cover attaching screw ..... 12 + 12 (PRO-119)
8 + 8 (PRO-99)
Main repeater 1
Mini repeater 1

NOTE:
Specifications and design are subject to possible modifications without notice due to improvements.